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DOMESTIC ENGINEERING

APRIL, 1934

***CODES*—Expect Early Approval for Contractors and Wholesalers —Manufacturers File Price and Labor Reports**

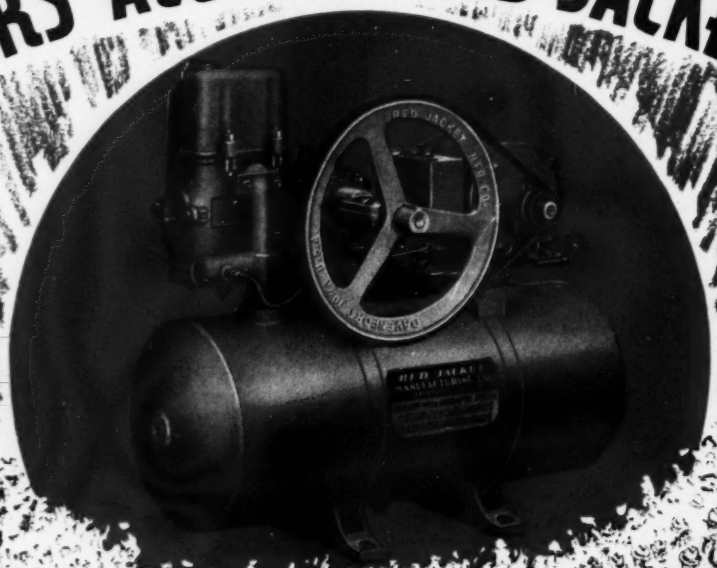
***REMODEL*—Sell Remote Control Water Heating—Loss from Old Property Is Changed to Profit through Rehabilitation of Apartments**

AUTOMATIC HEAT AND AIR CONDITIONING SECTION—PAGE 55

BEER AND BAR EQUIPMENT SECTION—PAGE 143

Plumbing & Heating Contracting and Merchandising

DEALERS ACCLAIM RED JACKET LINE



DEALER DISCOUNTS *NOT* REDUCED

Still the lowest prices

Dealers all over the country are swinging to the fast selling, low priced Red Jacket line of shallow well water systems. Red Jacket water systems are nationally known for their high quality construction and economical, trouble-free service.

The Red Jacket Mfg. Company always has believed, and still does, that the dealer is entitled to a liberal discount. In keeping with this policy we are *not reducing* our dealer discounts in order to lower our prices to the consumer. In spite of the fact that both material and labor costs have increased, our line of pumps and water systems still remains the lowest priced in the field. *And Red Jacket Dealers STILL MAKE THE LARGEST PROFITS.*

Aggressive Dealers are invited to get full details of our attractive dealer's proposition. Write for new 1934 catalog of complete water systems.

Red Jacket Water System Units, as low as..... $41.25
(Model 1150, 250 gallons capacity, as illustrated above $45.75.)

Also Complete Line of Hand, Windmill and Three-Way Pumps.

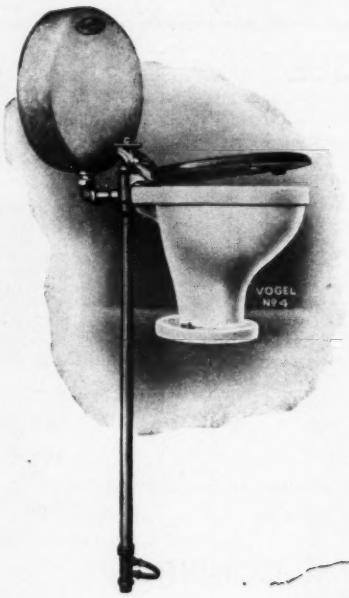
RED JACKET MFG. CO., Davenport, Iowa

DORWARD- *Red Jacket*

WATER SYSTEMS AND DEEP WELL POWER HEADS

Now that the winter is over . . . .

a lot of people wish they had installed Vogel Frost-Proof Closets and Hydrants



The Vogel Number Four Frost-Proof Closet —with a vitreous china bowl and top inlet. Can never freeze and looks as good as a bathroom closet.

But don't lose any time — see your customers and prospects NOW. We'll supply you with folders and blotters on the new Vogel line. Tell us how many you can use. They are imprinted with your name and address.

Coldie and Frostie are licked again

As winter is over and Spring begins,
Consider the case of the Cold Test Twins.
When the temperature dropped to zero and less,
The twins were certain they'd have success;
So choosing a night that was twenty-below,
Said Coldie to Frostie, "Come on—let's go!"
"Find me a Vogel and you'll get a laugh,
"For I'll crack that outfit and bust it in half."

But Coldie forgot—among other details
That a Vogel's as tough as a keg of nails.
So now he's disgusted and tired and sore
While the Vogel's as good as ever before.
And Coldie admits and Frostie agrees
That a frost-proof Vogel will never freeze.

JOSEPH A. VOGEL COMPANY
WILMINGTON, DELAWARE ST. LOUIS, MO.

• VOGEL PATENTED *Frost-Proof Products* •

DOMESTIC ENGINEERING

Plumbing & Heating Contracting & Merchandising

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Whole No. 1993 — APRIL, 1934

WE DO OUR PART

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3

CORROSION RESISTANT PIPES

Practically all plants have pipe line corrosion problems. Walworth offers three types of cast pipe; viz., WALWORTH NI-RESIST PIPE; WALWORTH C.N.I. ALLOY PIPE; WALWORTH CAST IRON THREADED PIPE. These pipes are made in the sizes 1¼" to 8" inclusive with the same wall thickness and outside dimensions as extra heavy steel pipe. They can be readily cut and threaded standard pipe thread with regular hand or power tools.

WALWORTH NI-RESIST PIPE

CHEMICAL PROPERTIES

Nickel	12.5 to	14.0%
Copper	5.5	6.5
Chromium	1.50	2.00
Manganese	0.60	0.75
Silicon	1.20	2.20
Total Carbon	2.80	3.10
Phosphorous	Under	0.30
Sulphur	"	0.12

GENERAL RECOMMENDATIONS:

Laboratory Waste Lines
Caustic Lines
Hydrochloric Acid Gas Liner
Alum Lines
Sulphurite Pulp Mill Blow Pit and Waste Lines
Weak sulphuric acid lines at normal temperatures
Etc., etc., etc.

Made in plain or threaded ends in any transportable length; also flanged ends, up to 24' long.

Valves and Pipe Fittings are also supplied of Ni-Resist.

WALWORTH C.N.I. ALLOY PIPE

CHEMICAL PROPERTIES

Nickel	0.30 to	0.50%
Chromium	0.20	0.30
Manganese	.70	.80
Silicon	2.35	2.55
Total Carbon	3.20	3.40
Phosphorous	Under	0.20
Sulphur	"	0.10

GENERAL RECOMMENDATIONS:

Sewage Disposal Lines
Sulphuric Acid Lines 60 deg Bé. and over
Condenser Coils
Cinderfill Lines
Dye Vat Waste Lines
Char Filter Waste Water Lines
Soap Lines
Salt Water Lines
Etc., etc., etc.

Made in plain or threaded ends in any transportable length; also flanged ends, up to 24' long.

Pipe Fittings also supplied of C.N.I.

WALWORTH CAST IRON THREADED PIPE

CHEMICAL PROPERTIES

Manganese	0.30 to	0.50%
Silicon	2.15	2.40
Total Carbon	3.40	3.60
Phosphorous	Under	0.75
Sulphur	"	0.10

GENERAL RECOMMENDATIONS:

Building Vent and Waste Lines

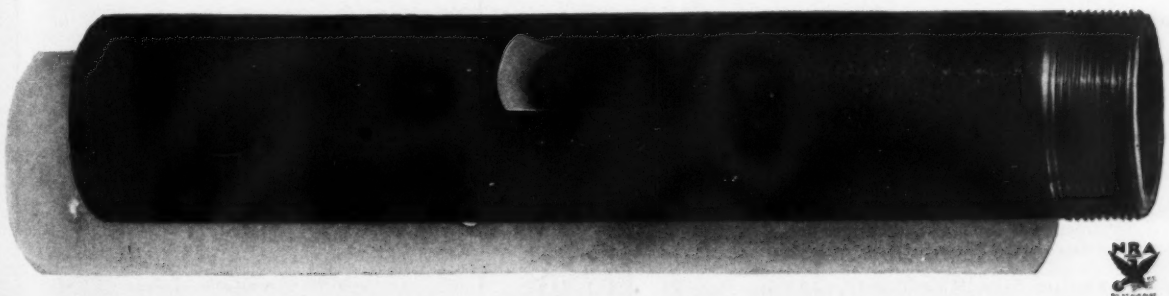
Varied Water Lines

Golf Course Sprinkling Systems

Also lines in general where corrosion conditions are such that steel or wrought iron pipe does not give satisfaction.

Prices on 5' lengths same as standard galvanized steel pipe.

Made in plain or threaded ends in lengths up to 20' long.



NRA

WALWORTH

VALVES FITTINGS and TOOLS
Backed by 91 Years' Service

WALWORTH COMPANY
60 EAST 42nd STREET, NEW YORK

DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT THE WORLD

FOR BRASS . . .

The Best Name is Scovill

1 SCOVILL STOCKS ARE COMPLETE STOCKS

2 SCOVILL KNOWS PLUMBERS' PROBLEMS

CHECK this full list of Scovill Brass products and see if it doesn't show you a short-cut in ordering for jobs that call for brass. You can now buy all your brass goods—including brass pipe—from a single, trusty source. You'll save time and trouble on every order, and have the satisfaction of knowing that every item for the job is *right*—the best you can get.

Scovill stocks are full stocks. And Scovill orders are filled and shipped complete. Order pipe and fittings at the same time. They will all arrive at once—no delays due to different shipping points.

Scovill knows your problems. Thinks about your profits and helps you to make them. Free, practical dealer-helps will be furnished to you on request. Scovill helps you sell as well as install first-class construction.

132 years of Scovill experience and rigid standards stand back of every foot of Scovill pipe, every Scovill fitting. Thousands of O.K. Scovill jobs guarantee you success with Scovill materials.

For further information on Scovill brass pipe or other Scovill products, see your Scovill representative. Or write direct. No obligation.

TRAPS — **SUPPLY PIPES**

WASTE AND OVERFLOWS

TUBES — **ELBOWS** — **OFFSETS**

NUTS — **BATH FITTINGS**

SHOWER FITTINGS

FLUSH VALVES — **BASIN WASTES**

LAVATORY FITTINGS

SINK AND WASH TRAY COMBINATIONS

***SCOVILL NUTCAP**

***SCOVILL FOLDSPRAY**

***SCOVILL VOGUE FITTINGS FOR BATH, SHOWER AND LAVATORY**

BRASS AND COPPER PIPE

**Exclusive Scovill products. Modern profit items with exceptional sales-appeal.*

SCOVILL MANUFACTURING COMPANY

Plumbers' Brass Goods Division

WATERVILLE • CONNECTICUT

SCOVILL FLUSH VALVES, SHOWER, BATH AND LAVATORY FITTINGS, MISCELLANEOUS PLUMBERS' BRASS GOODS

THE SATURDAY EVENING POST

(Continued from Page 34)

and that's the essential. On the side I've been able to do quite a little geological analysis. This is all a fresh field, you know—almost nobody has really worked here. I've found some trilobites that weren't even supposed to exist in this part of the plateau. . . . But all that wouldn't interest you. Anyway, here I am."

"How I love boiled eggs!" said Lois. "We've
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sian story. It happened before the building of Persepolis."

"Dear me," said Lois. "I can't think that far back. But tell us the story."

"It was in the days of the great King Vishtáspa," said George, enjoying himself. "A young prince at his court was in high favor because of his family, and held high posts in the great king's army. When he was nineteen, the great king engaged in a desperate struggle with some neighbors to the northwest—probably the ancient Armenians, a very different lot from the ones we know. The young prince was put in charge of an important section of the army, and was told to distinguish himself for the glory of his name and his tradition. He did well enough for a while, and actually captured with his own spear the king commander of the
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the enemy ambassadors talked, and accepted their terms without knowing what he did. The fifth time, he tried to build a fortress and made it so beautiful that it would not withstand an assault; and the sixth time he was engrossed in astronomy when he should have been guarding the palace of the great king. On the seventh occasion, when he caused the wife of the great

SALES
AND WORK
if you are prepared

•

Put in a stock of Crane *Addenda* Showers and *Refreshor* Shower Heads before this national advertising appears in The Saturday Evening Post on May 12th. Millions of people will be thinking of "showers"—many of your customers will be buying them from you if you have a stock ready to sell.

CRANE

CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVENUE, CHICAGO
NEW YORK: 23 WEST 44TH STREET
Branches and Sales Offices in One Hundred and Sixty Cities

A new CRANE ATTACHABLE SHOWER ONLY $11.50 plus installation charge, slightly higher in Canada

EASY TO ATTACH
NO MARRING OF WALLS
Ask Your Plumber

For a zestful morning pick-up, for soothing night-time relaxation, there is nothing like the clean flow of a modern shower. You no longer have to do without one. Now, with no tearing out of plaster walls or tile, for surprisingly little money, you can have a shower bath.

In just a few minutes for just a few dollars, the plumbing contractor in your neighborhood will install the Crane *Addenda* shower.

This ingenious fixture fits any built-in tub. A simple change of the spout, two screws inserted, and it is ready. There is no fuss, no muss. In *chromium* plate it is a smart addition to the bath room.

And what a shower! Equipped with a Crane Refreshor Head, each thread of water comes forth, clear-cut and splashless. With easy adjustment you may direct it where you wish. A simple twist of the hand opens the shower head for easy cleaning. If you already have a shower, you can purchase this head separately.

Why not call up a plumbing contractor right now? He has, or can get quickly from a nearby Crane branch, your new *Addenda* shower, and supply as well the correct shower curtain rod and a curtain in the color and pattern you prefer.

CRANE ADDENDA SHOWER FIXTURE
Chromium Plated — easy to keep shining.
C 4344-B Over-rim Spout
C 4345-B Top Nozzle

Curtain Rods from $2.50 up. Also shower curtains at reasonable prices.

CRANE REFRESHOR SHOWER HEAD
$3.10 Slightly more in Canada
Chromium Plated — Swivel Joint

Clubs, Hotels! It uses 50% less water
Saves money in heating water

CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO
NEW YORK: 23 WEST 44TH STREET
Branches and Sales Offices in One Hundred and Sixty Cities

CHICAGO FAUCET NEWS

Issued Monthly by The Chicago Faucet Co., 2700-22 N. Crawford Ave., Chicago, Ill. Vol. 2, No. 6

AGAIN IT'S SPRING

The signs are perennially unmistakable. Mother is beginning to worry about house cleaning; Junior is turning the house upside down searching for his baseball bat; sister is feverishly scanning the fashion books; and father is beginning to prowl about the place, making notes of needed repairs. Verily, 'tis spring.

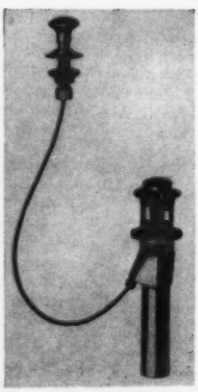
SO HERE'S SOME SPRING POETRY

The faucets in the bathroom
Are in an awful state.
We hear them dripping early,
We hear them dripping late.
Oh! What to do about it!
We're nearly in despair.
We've tried, but they just seem to
Be 'way beyond repair.

Then up spoke Jim, the plumber;
"I'll tell you what to do.
"Some new Chicago Faucets
"Will be the thing for you.
"For they close *with* the pressure.
"Their only wearing parts
"Can be renewed as easily
"As—well, just think of anything that's real easy to do and that will be twice as difficult as it is to slip a new washer and seat into a Chicago Faucet."

FLEXROD

POP-UP LAVATORY WASTE SCORES "HIT"



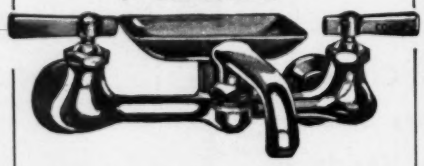
In last month's issue of this magazine, the Flexrod Pop-up Lavatory Waste was introduced to the plumbing industry. The response has been most gratifying. The Flexrod is a "hit," and the reason is not difficult to see; for it marks a new epoch in the development of pop-up lavatory wastes. It is distinctly different—different in principle, different in operation—and it opens a broader field of adaptability.

The Flexrod Pop-up Lavatory Waste employs a unique application of the flexible rod principle. A strong bronze wire, directly connecting the knob with the stopper, operates through a close-coiled bronze spring which serves as a housing. There are no rigid rods, and, therefore, no joints, bolts, bearings, cams or levers to get out of order and give trouble. Its action is direct and positive. The knob is swiveled and turns independently of the wire. The stopper is nonturning. Since there is nothing below the stopper but a vertical wire, escape of water is astonishingly rapid when the waste is opened. The Flexrod is self-adjusting to every dimensional variation of centers.

Here is a fitting of the utmost suitability for both new installations and modernizing. It is the first pop-up waste available for installation on old plug and chain basins without any change whatever to the basin itself.

The Flexrod will be a swell business builder for spring.

GOOD NEWS ABOUT THE STRAIGHT-8 STREAMLINE CLASSIC



The "class" of the sink faucet field. Lower, more graceful, more compact—the choice wherever sheer beauty is a prime consideration. Especially adapted to the new low-back sinks. Only 3¼ inches high. Adjustable from 7¼ inches to 8¾ inches. Finished in lustrous chromium.

And now for the good news. The Straight-8's price has just been substantially reduced, thus putting this superior faucet right into the picture for helping increase your spring business. So look over your prospect list now. Pick out the names where highest quality is demanded. Then get busy on some certain Straight-8 Streamline Classic sales. Profit and prestige for you will result from each installation.

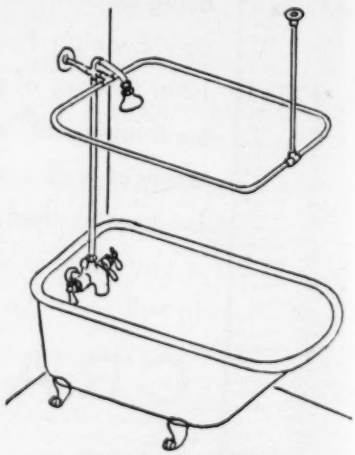
The wide variety, splendid modernity and infinite adaptability of The Chicago Faucet Company's line of high grade plumbing specialties make it an immediate and unfailing source of supply for spring replacement and modernizing business getters. The items on this page are typical.

BROWNIE SHOWER HEAD A WINNER

The Fast Selling Brownie

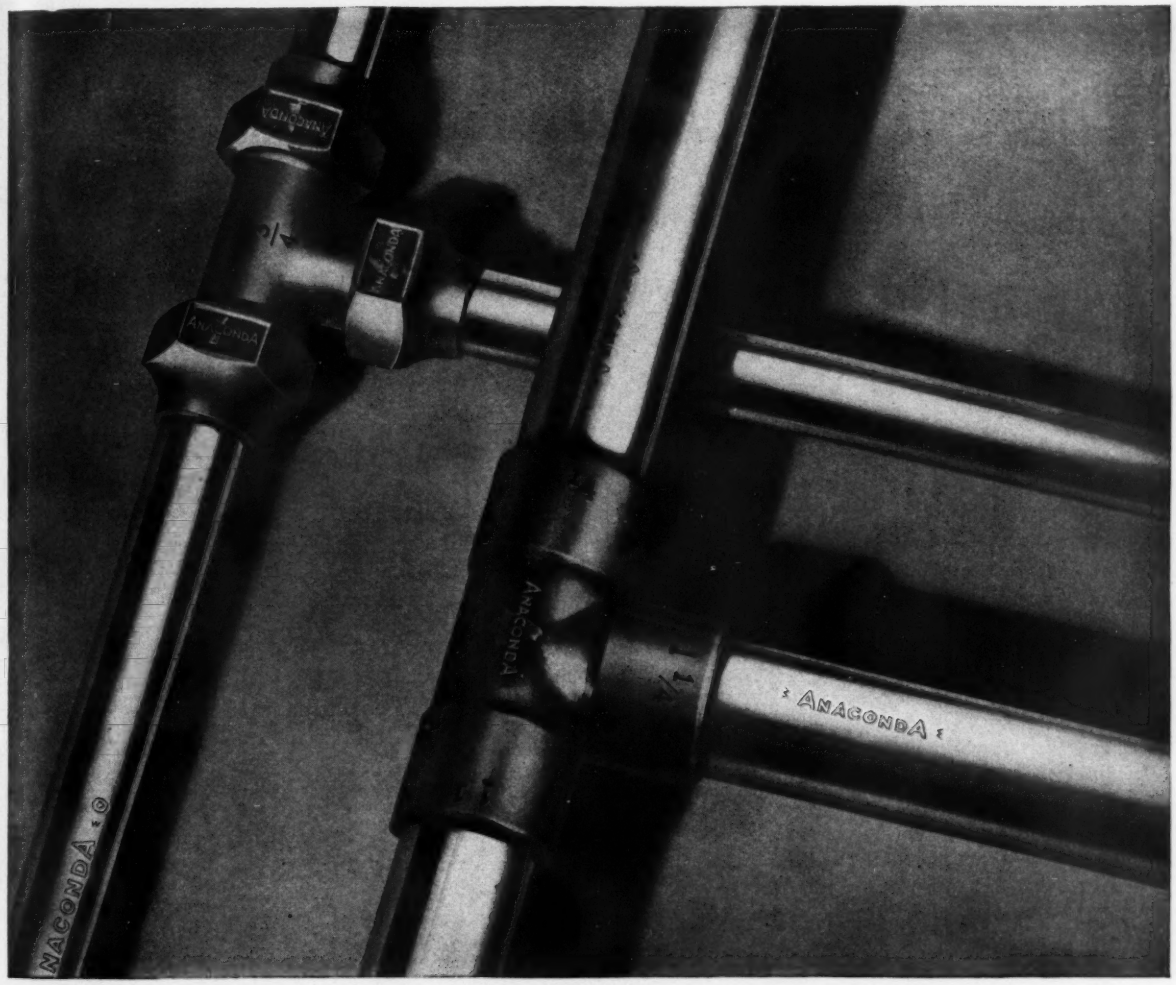
Wherever there is, for any reason, the necessity for being economical of water for shower bathing, the Brownie Self-cleansing No-drip Shower Head scores a bulls-eye. It saves 25 to 50 per cent of the water ordinarily required. And in an increasing number of cases where water economy does not enter in, Brownie still gets the preference because of its stimulating action.

ADD-A-SHOWER SOLVES MANY TOUGH PROBLEMS



Add-a-Shower Installation

More and more families want shower facilities; but many such families cannot afford a built-in equipment. This, in itself, is a problem which an Add-a-Shower solves. Then oftentimes conditions are such as to make the installation of ordinary shower equipment unfeasible. But you can't stump an Add-a-Shower. There is hardly a tub installation conceivable where an Add-a-Shower cannot be readily installed, and without disturbance to established arrangements. So interesting is the Add-a-Shower as a merchandising item, that every plumber is certain to want to read the Add-a-Shower story which will appear on this page next month. Look for it.



A message to the many Plumbing Contractors who prefer to use Anaconda products

TO help you compete for low-priced rust-proof jobs, The American Brass Company now furnishes a complete line of Anaconda Cast Bronze Fittings of both the "solder" and "flared tube" types, ideal for assembling Anaconda Deoxidized Copper Water Tubes.

Both tubes and fittings are made to the accurate, standardized dimensions so essential to the making of sound, leak-proof joints.

As in the past, Anaconda 85 Red-Brass Pipe in standard sizes for threaded assembly is recommended as the most durable pipe commercially obtainable at moderate cost.

The choice of Brass Pipe of the correct alloy for local water conditions, or of Copper Tubes connected with either "solder" or "flared tube" fittings, must necessarily depend on the type of installation desired.

ANACONDA
from mine to consumer

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Connecticut
Offices and Agencies in Principal Cities

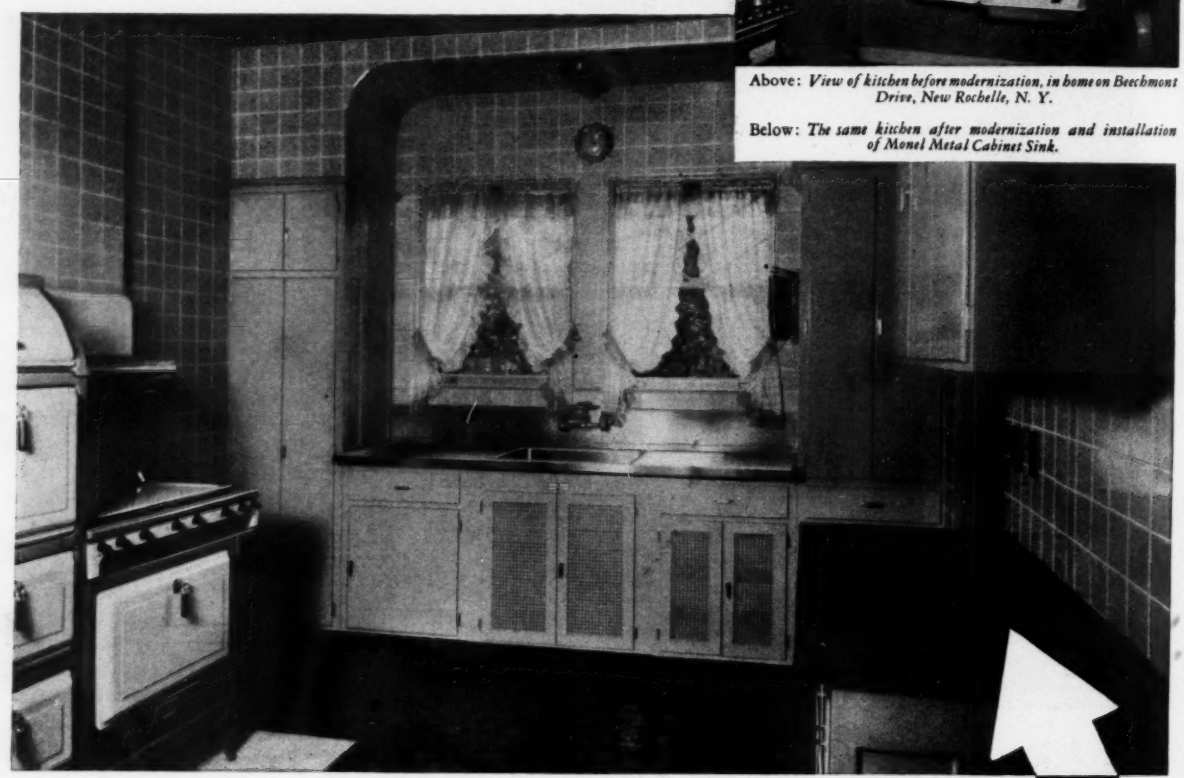
NRA

ANACONDA COPPER & BRASS

How many Kitchens LIKE THIS

Above: *View of kitchen before modernization, in home on Beechmont Drive, New Rochelle, N. Y.*

Below: *The same kitchen after modernization and installation of Monel Metal Cabinet Sink.*



Can you make look Like This?

THE trend is certainly towards renovation. With thousands of houses hanging on their hands, owners of real estate have simply *got* to do something to move them...and *renovating* is what they are doing.

The remodeled kitchen shown above, in a home on Beechmont Drive, New Rochelle, N. Y., is not only typical of the good plumbing jobs that can be got right now, but it also gives you a hint on *how* to get them.

Monel helps to land plumbing contracts

Notice the sink... it's made of Monel Metal. When you talk Monel Metal you talk in terms of what people are wanting...of what people look upon as the ideal in Modern Kitchen equipment.

In fact, Monel's 7 years of increasing advertising in the great "Million Reader" magazines has had so powerful an influence that today, when editors or advertisers want to illustrate smart, modern kitchens, you find they nearly always show Monel Metal equipment.

Prospects already sold

So Monel's silvery beauty, its absolute proof against rust, its resistance to corrosion are all *common knowledge* to your prospects. They *know* it is easy to clean, strong as steel, solid metal right through, with no coating to chip, crack or wear off.

Therefore you don't have to *sell* Monel Kitchen equipment on remodeling jobs. Your prospects are sold on it already.

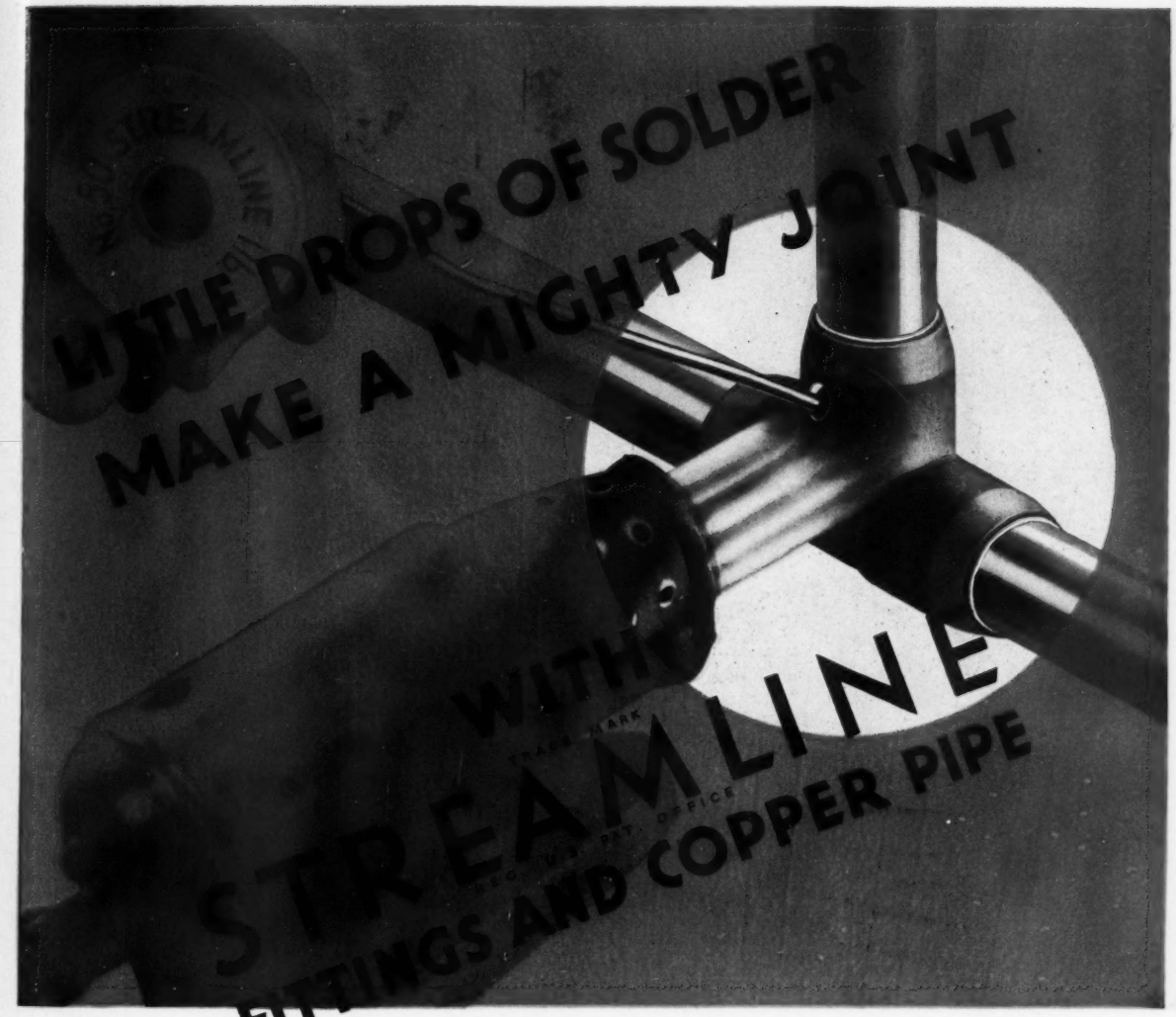
All you need do is explain how reasonable the cost is, now that Monel sinks and cabinet tops are *standardized* in 57 models and sizes.

Have the facts handy. If you have not yet received our newest price sheet and catalog giving complete data on each model, be sure to write for both today.

THE INTERNATIONAL NICKEL CO., INC.
67 WALL STREET, NEW YORK, N. Y.

Monel Metal

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.



● A journeyman's skill, a few drops of solder and a law of nature combine to make the tightest and strongest joint known to the trade.

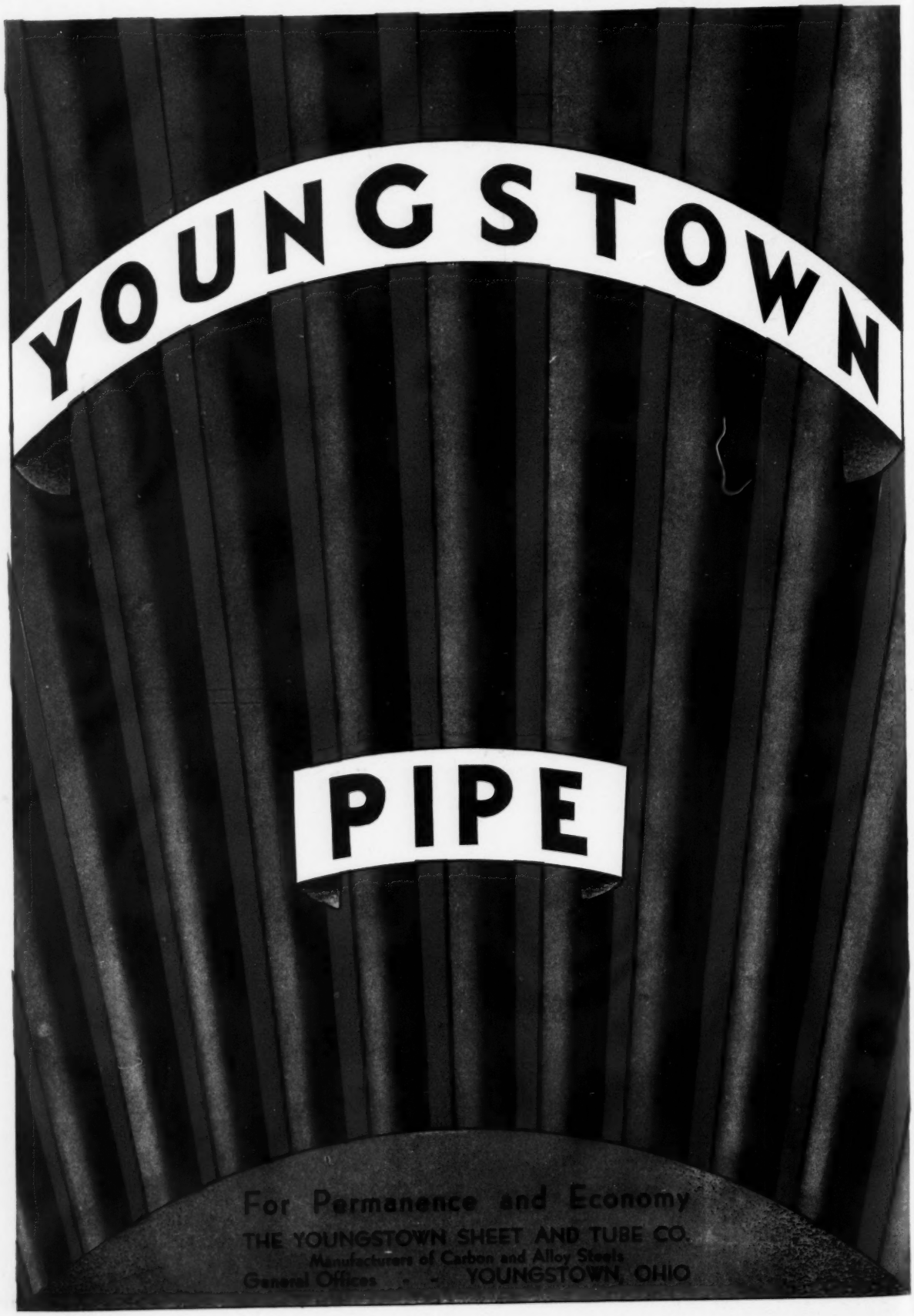
Two sections of ¾" extra heavy hard STREAMLINE copper pipe connected with a STREAMLINE coupling requires 9500 pounds of pull before a break occurs—but the break is in the pipe *and never in the joint*—and don't forget, the heavier the pipe, the greater the strain on the fitting in a pulling test.

Again, if this same section of pipe is subjected to a test in a hydrostatic pump, it will take the enormous internal pressure of 9000 pounds per square inch before the pipe breaks—*but the joint invariably remains intact.* These are extremes of pressure and pull away and beyond anything encountered in actual service.

A STREAMLINE installation is non-rusting, vibration-proof, and enormously strong and the joint is even much stronger than the pipe itself.

These are cold, hard facts, not idle statements—we can prove them to your satisfaction.

STREAMLINE
PIPE AND FITTINGS
PORT HURON, **CO.** MICHIGAN
DIVISION OF MUELLER BRASS CO.


YOUNGSTOWN
PIPE
For Permanence and Economy
THE YOUNGSTOWN SHEET AND TUBE CO.
Manufacturers of Carbon and Alloy Steels
General Offices - - YOUNGSTOWN, OHIO

OF COURSE

there are cheap showers and fixtures . . .

But did you ever make a decent profit selling them?

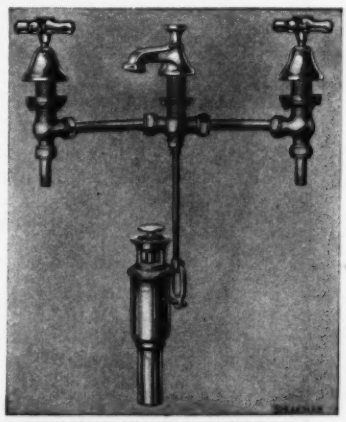
You know that you never did, and so do we, for if you don't get a decent price, you cannot make a decent profit.

And if you install cheap fixtures you take the grief — you make back calls trying to make something right that can never be made to function efficiently. If it could be, do you think that we would go to all the trouble that we do to build *quality* into Speakman Showers and Fixtures?

And here is what we mean by *quality*:

Electrically melted brass; heavy castings and clean-cut threads; renewable-seat valves; swivel disc, encased washers; Chromium Plate that never wears off; full-size waterways and ample escutcheon adjustment.

Find these features in cheap showers and fixtures if you can.



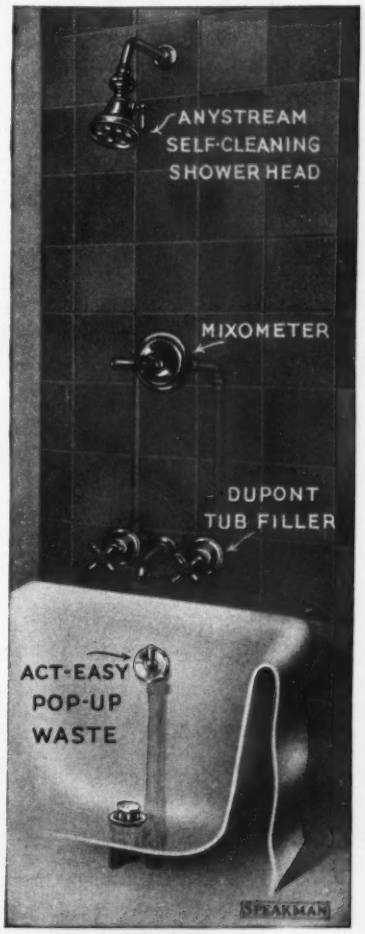
K-5010 — SPEAKMAN Unit-Acto Lavatory Fixture.

And from the angle of your future business, isn't it better to work for satisfied customers year after year than to lose customers because you allowed them to convince *you* that they couldn't afford good fixtures?

You know your business, and don't let them do this — call on us for literature which will help you to sell *quality*.

SPEAKMAN COMPANY
Wilmington, Delaware

An Ideal Quality Installation

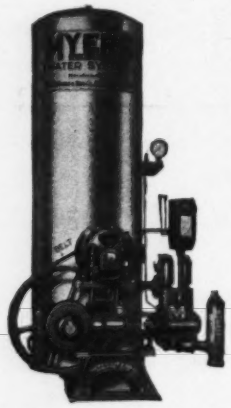


K-4039-M—SPEAKMAN Mixometer Shower and Tub Combination.

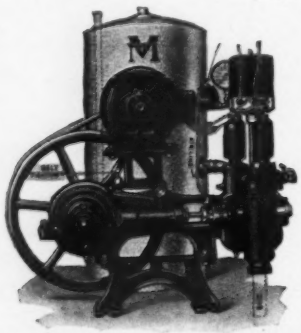
K-550—SPEAKMAN Si-Flo Closet Combination.

SPEAKMAN *Showers & Fixtures*

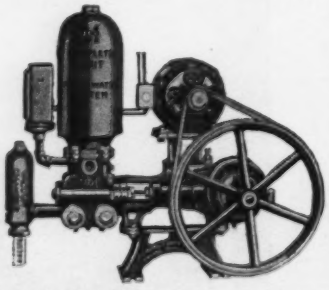
NOW
WHILE PRICES ARE STILL LOW



906AT, 250 gallons per hour....$ 67.00
909AT, 340 gallons per hour.... 71.00
901AT, 500 gallons per hour.... 110.00
902AT, 750 gallons per hour.... 125.00



927AM, 250 gallons per hour....$ 60.00
928AM, 340 gallons per hour.... 64.00
929AM, 500 gallons per hour.... 102.00



926AM, 250 gallons per hour....$50.50
925AM, 340 gallons per hour.... 54.50

Not just because prices on Myers Shallow Well Water Systems and Electric House Pumps are still low but because Myers Quality Standards have been rigidly maintained, it's good business while the opportunity is here to take full advantage of the exceptional possibilities this combination—quality plus price—provides for increased water system sales during the important Spring and Summer selling seasons just ahead.

Manifestly, conditions are changing. Material and labor costs are stiffening. Gradually but surely low prices are passing. Of a certainty you will want to fortify your position by placing early specifications for Myers Water Systems of the same fine quality, the same popular sizes, the same capacities, the same proved performance, while present favorable prices are available.

Act now by writing or wiring us direct, or immediately communicating with our quantity distributor from whom you regularly secure Myers Water Systems.

Take Off Your Hat To The MYERS
PUMPS · WATER SYSTEMS · HAY TOOLS · DOOR HANGERS

THE F.E.MYERS & BRO. CO.
ASHLAND, OHIO.

This is
The New M-VB No. 18 BALLCOCK

Better in Six Ways

ONE — It's as quiet as you want it, adjustable to absolute silence at any pressure from 5 pounds to 200 pounds.

TWO — Even at a pressure as low as 5 pounds, it can be adjusted to fill the tank in 100 seconds.

THREE — The regulator is hard rubber, to cut down corrosion, to prevent freezing into the body. The plunger has a full bearing in rubber its entire length.

FOUR — A powerful new-type leverage makes it easy to install in close tanks, easy to get at the regulator.

FIVE — All thumbscrews are cast bronze, a mark of quality.

SIX — It uses a standard 4″ x 5″ float at even the highest pressures.

Economical Always

With all its betterments, this new No. 18 ballcock costs no more than the ordinary type! When you consider the kind of service it gives, it's really the most economical fitting you can buy.

M-VB design and materials and workmanship assure your customers of a first-rate job, keep up your reputation, bring you new business.

Remember that all M-VB ballcocks may be had neatly packaged at a small extra charge. Makes it easier to keep your stock-room in order and identify every model.

Ask your jobber for prices on the new M-VB No. 18 ballcock. Write to us for the M-VB catalog.

MORENCY-VAN BUREN DIVISION
Scovill Manufacturing Company
STURGIS MICHIGAN

A COMPLETE LINE OF CLOSET TANK FITTINGS

WISECO PRODUCTS

WISECO

COMBINATION LAVATORY SUPPLY AND WASTE FIXTURE with Pop Waste

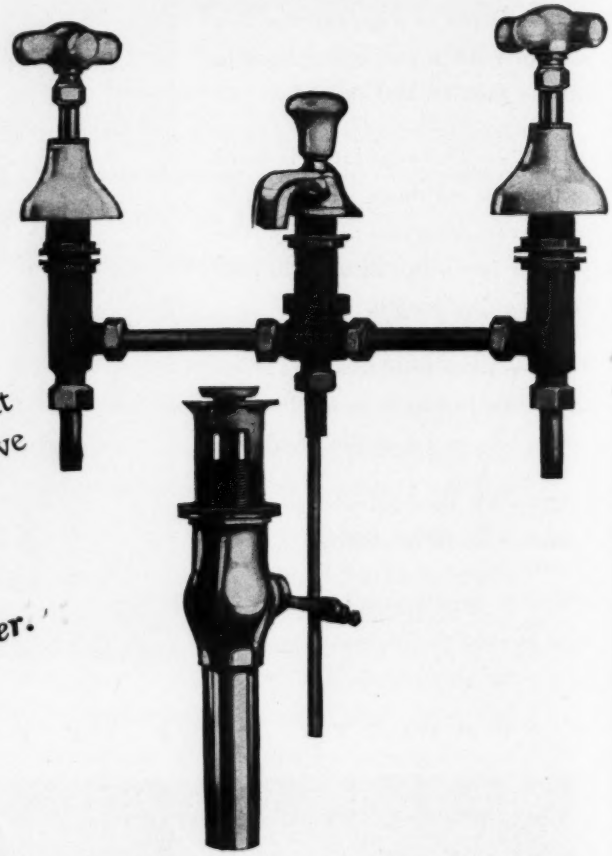
Here's a real leader for you.

It may be furnished either in China or All Metal Trim. Nickel Polished or Chromium Finish.

A real quality product that still sells at a competitive price.

Easy to install.

Ask your jobber.



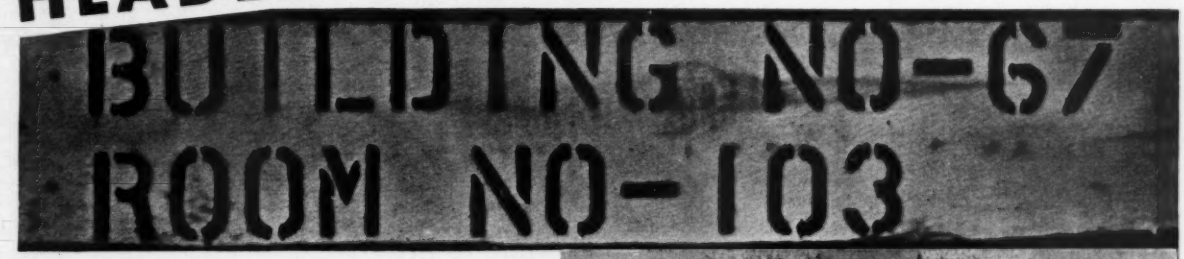
THE STANDARD OF QUALITY
SINCE 1877

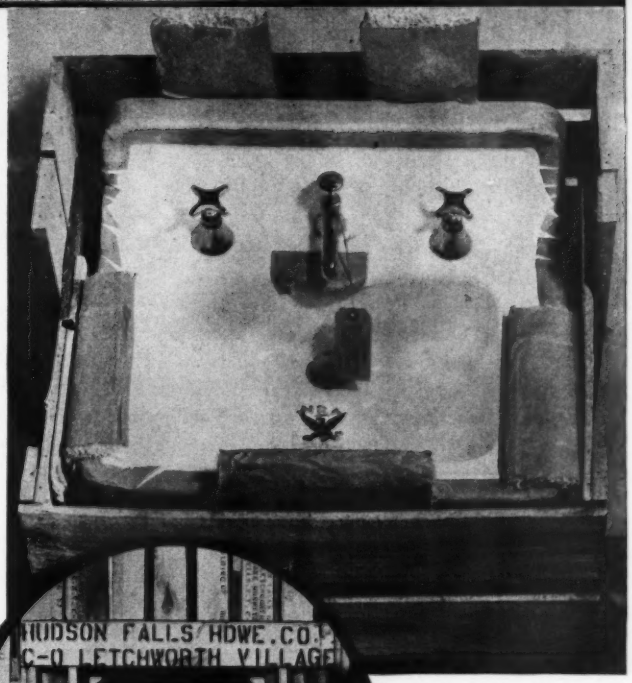
J. B. WISE, INC.

WATERTOWN NEW YORK

NEW YORK · PHILADELPHIA · ATLANTA · CHICAGO · LOS ANGELES · SEATTLE

HEADED FOR





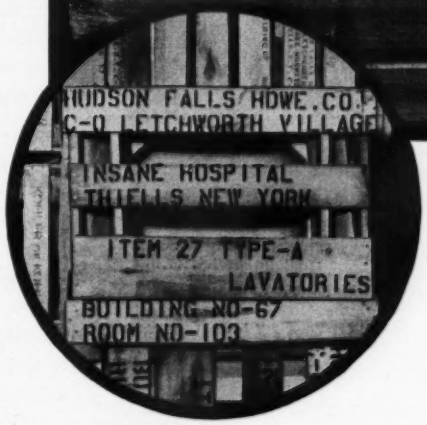
● Good things come in carefully packed crates — *and properly marked!* Note the Kohler lavatory at the right. Stenciled plainly are the *very room and building numbers* where the fixture will be installed!

Which means that a schedule of operation can be fully maintained. No confusion or delay. Each fixture uncrated *as needed*, then installed. No uncertainties. No misplaced or damaged parts. The job moves smoothly to its conclusion. Everybody is satisfied — most of all the plumbing contractor and his men.

A good example of Kohler efficiency from start to finish!

Note also how this lavatory is crated. Sturdy boards securely nailed and braced. Fixture held in place by cleats. Thick excelsior pads to prevent slipping and resulting damage to the finish. Heavy paper tape to cover the edges and hooded surface.

Kohler manufactures in *one place*, Kohler assembles and ships from *one place*. From the time an order is received until delivery is made, expert and *co-ordinated* attention is given to it by the Engineering, Roughing-in, Production, Shipping Departments to insure its delivery at the *right time* and to the exact destination. Kohler Co. *Founded* 1873. Kohler, Wis. *Shipping Point*, Sheboygan, Wis.



RECENT KOHLER INSTALLATIONS

1 Mercy Hospital, Davenport, Iowa. *Architects*—Schmidt, Garden & Erickson. *Associate Architect*—Arthur H. Ebeling, Davenport, Iowa. *Plumbing Contractor*—Ideal Heating and Construction Co., Davenport, Iowa. *Wholesaler*—May Co., Moline, Illinois.

2 U. S. Veterans Hospital, Danville, Ill. *Plumbing Contractor*—Tibbetts Plbg. & Htg. Co., Union City, Ind. *Wholesaler*—Knapp Supply Co., Muncie, Indiana.

3 U. S. Veterans Hospital, American Lake, Washington. *General Contractor*—Western Construction Co., Seattle. *Plumbing Contractor*—Bergh-Griggs, Tacoma. *Wholesaler*—J. C. Bowles Co., Seattle.

KOHLER of KOHLER

PLANNED PLUMBING

1

2

3

Thanks:
I thank you for the very prompt reply to our request for information. Few publications would do so well.
N. C. D., Pennsylvania

BETWEEN OURSELVES

Wait on Washington

CODES for the retailing and wholesaling branches are still awaiting approval by Washington authorities.

Hearing on April 12

THE HEATING, piping and air conditioning contractors have a hearing on their code, set for April 12. Like the master plumbers, this code is supplemental to the construction industry code, which was published in full in our last issue.

One Code Is Working

IN SPITE OF the fact that new construction jobs are not as plentiful as they were some years ago, one hears around the country of the effect of this construction industry code. Bid peddling and the dozen and one other problems which worked to the disadvantage of the sub-contractor are definitely attacked by this code. It aims to make a bid mean something rather than becoming an excuse for some one to chisel out a lower price.

Settle Dispute

THE PLUMBERS and the wholesalers—the two branches which are still after a code—settled their differences in March. The discussion in public, extended over two months, starting in January when the wholesalers' code went into the NRA hopper without a sufficiently definite clause covering retailing to meet the retailers' wishes. As finally worked out, modifications were introduced which clear up this point.

A New Keystone

BOTH SIDES were anxious to see rapid progress made, as they unite in praising the manufacturers' code. This is referred to as the keystone upon which a sane and successful plumbing and heating industry can be built with some measure of success guaranteed to those who deserve it rather than to those who do not.

File Reports

PROGRESS was reported during the past month in putting the manufacturers' code into effect. This code, like all others, requires a number of reports from the members of the industry, statements of policy, schedules of prices, etc., all of which require time to prepare and submit, as well as time in co-ordinating by the Code Authority. That necessary spade work has been under way for some weeks now by the Code Authority at its offices in Pittsburgh.

More to Offer

REMODELING continues to offer the channel for business development. The arguments which have always been available for use with your customers have been definitely strengthened in recent months by the many new and desirable products brought out by our industry and offered through you.

Out After Remodeling

IN THIS ISSUE are some timely suggestions along this important route of remodeling. Take one interesting angle. Water heating with remote control is appealing to many customers who want as much convenience as possible but who are forced to economize.

Now It's Rented

THEN you'll find an interesting account of what was done with a property, taken over in a foreclosure suit. The products of our industry were put in the front rank as essential steps in modernizing this property.

Many Prospects

AN INTERESTING SIDELIGHT on remodeling is given in our report of the government's survey. In the cities, many CWA workers were used to check up on the condition of properties. They found a surprising need for modernization. In rural counties, a similar survey included not only the condition of the homes, but answers to the question of what the owner would do with $500 if that were provided to rehabilitate his property. The answers show the widespread desire to have the greater comforts provided by the products of our industry.

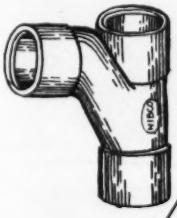
It's Interesting

BUSINESS is getting more interesting and more satisfactory every day. All of us have more to offer. We're trying hard to give you better service in DOMESTIC ENGINEERING. You're working hard to give your customers more. And now that results are beginning to show for our work, it's a lot more fun.

Your Editor

NIBCO

An Important Name in Copper Plumbing



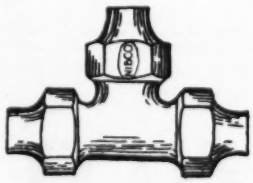
Because NIBCO has always been a leader in the field of copper plumbing the name has assumed a genuine importance in the minds of plumbers who know.

First of all, NIBCO means *reliability.* You can depend on NIBCO for quality of materials and workmanship.

NIBCO means *sound principles.* NIBCO fittings are basically right in design, without ballyhoo for this feature or that which may sound good on paper but doesn't work out on the job.

NIBCO means *accuracy.* Nobody knows better than we do how important it is to hold fittings to close tolerances. That makes your work easier, sounder, and tighter.

NIBCO means *adaptability.* Some work calls for flared tube fittings, while other jobs are better in hard tubing with solder fittings. Waste and vent lines require special fittings for the purpose. NIBCO makes them all--with valves and unions for different sorts of connections.



If you aren't familiar with NIBCO, ask your jobber or write us. It's too important a name for you to overlook.

NORTHERN INDIANA BRASS COMPANY

ELKHART, INDIANA

MAKERS OF "ACE" BALL COCKS

MORE than just a LOW PRICE!

● Any manufacturer can lower the price of his product. But to lower the price and *keep the quality—that* is something that only a manufacturer in an exceptional position can do.

Fairbanks-Morse is in that position!

Volume is the reason. Volume production which permits the use of money saving machinery—volume which enables advantageous purchase of raw materials—volume sales which make a large number of small profits on many home water plants, take the place of large profits on a few plants.

Thus it is that Fairbanks-Morse enables you to offer a bigger value—a value that is evident to anyone who knows water systems.

Steadily this F-M policy is making profits for dealers. At a time when buying is on the upswing it is all the more important that you handle the right line of Home Water Systems.

New Catalog Now Ready

A new catalog giving low prices and construction information on the F-M complete line of Water Systems is now ready. Send for it today. You will want our dealer and distributor proposition.

You can make *more* money selling this popular nationally advertised line.

THE "CHALLENGER"

NOW $48.50 list, f. o. b. factory

A 200-gallon electric outfit complete, ready to install, including motor protective relay. For 110 volt, 60 cycle current.

FAIRBANKS, MORSE & CO.

MANUFACTURERS

CHICAGO, ILLINOIS, U. S. A.

Branches and Service Stations Covering Every State in the Union

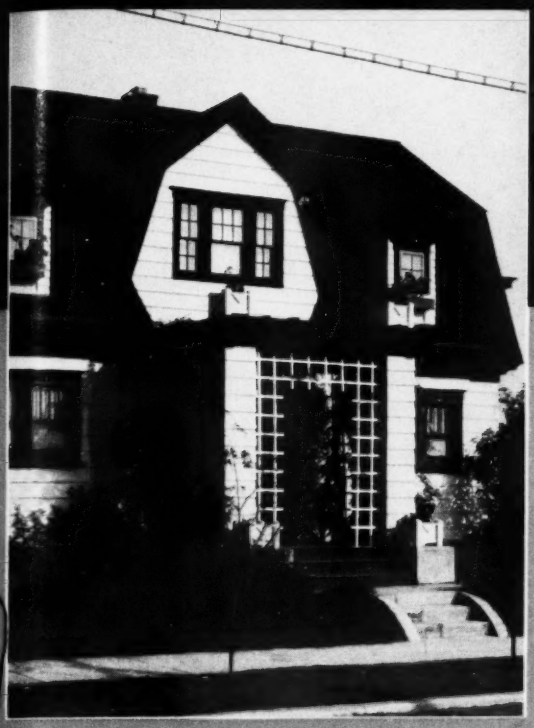
SEND FOR NEW CATALOG

Fairbanks, Morse & Co., Dept. I-4
900 S. Wabash Ave., Chicago, Ill.

I am interested in your dealer proposition. Send me complete information and FREE Catalog on Water Systems.

Name .....

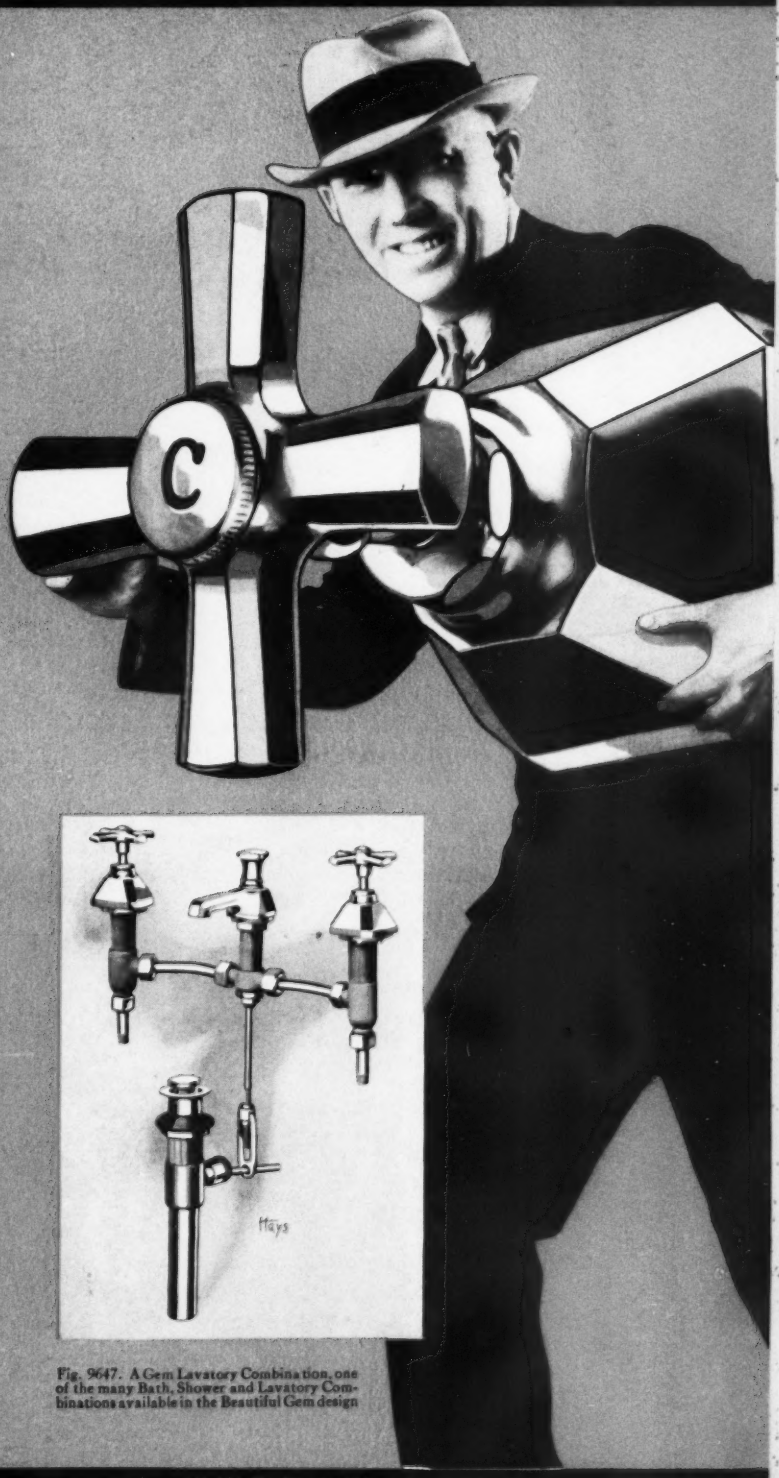
Address .....



CARRY HAYS GEMS

to your market - Mr. Plumber

~ ~ ~ They are right



You'll win new jobs without sacrificing quality « « « «

Get behind these beautiful Hays Gems, they are built to win the lasting approval of all classes of homeowners. They are smart enough for the finest homes and priced for the very modest. They are first quality right through to the core. Deep lustrous chromium keeps them always like new. They appeal on sight.

1934—A Promising Year

500,000 more Electric Refrigerators to be sold than in 1933.
50,000 more Kitchen Stoves to be sold than in 1933.
50% more Radios to be sold than in 1933.
40% more Furniture to be sold than in 1933.
Automatic Heating Sales will show substantial increase in 1934.
Air Conditioning in the home will have its biggest year.

All of which indicates that the homeowner is going to spend more money this year for home conveniences. How about going after your share of it, Mr. Plumber? Be a "Fuller Brush Man" this spring, go out and ring door bells. Take attractive Hays Gems to market and you'll win new jobs without sacrificing quality. Mail the coupon today for the new Gem folder.

HAYS MFG. CO. 1223 Liberty St.
ERIE, PA.

Fig. 9647. A Gem Lavatory Combination, one of the many Bath, Shower and Lavatory Combinations available in the Beautiful Gem design

HAYS *Since 1869 Quality* BRASS

COPPER PLUMBING - - - BATH FIXTURES

PLUMBING BRASS GOODS *from Street to Bath*

CLIP THE COUPON TODAY

HAYS MFG. CO.,
1223 Liberty St., ERIE, PA.
Gentlemen—Please send me a copy of the Hays Gem Folder

Name .....

Address .....

NRA MEMBER U.S.
WE DO OUR PART

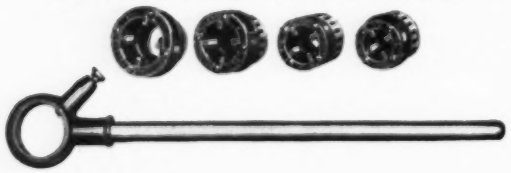
A 1/8" to 1¼" Ratchet PIPE THREADER

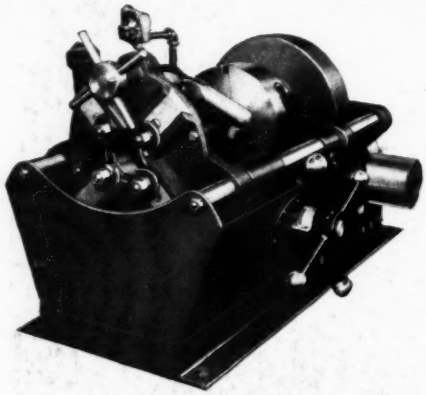
"TOLEDO" now offers the popular No. 11 ½" to 1¼" ratchet tool in a still greater range. It is the only tool threading ⅛" to 1¼" pipe inclusive. Other small ratchet sets stop at 1"—the "TOLEDO" No. 11 includes 1¼". Long handle, large ratchet, dies can be reground when dull, and ample chip clearance.

Any combination of die heads can be ordered as required. A few are listed below and the net prices shown.

		East of Rockies	West of Rockies
No. 11, ⅛" to 1" inclusive	Net	$17.00	$18.70
No. 11, ⅛" to 1¼" inclusive	Net	19.50	21.45
No. 11, ¼" to 1¼" inclusive	Net	17.00	18.70
No. 11, ⅜" to 1¼" inclusive	Net	14.50	15.95
No. 11, ½" to 1¼" inclusive	Net	12.00	13.20
Ratchet Complete, No Dies	Net	2.00	2.20
Die Head With Dies, Any Size, each	Net	2.50	2.75

All Prices F. O. B. Toledo, O., or Distributor's Stock





THE NEW IMPROVED "TOLEDO" No. 999

Now with its recent improvements the "TOLEDO" No. 999 is more than ever the outstanding value in ½" to 2" portable power pipe machines.

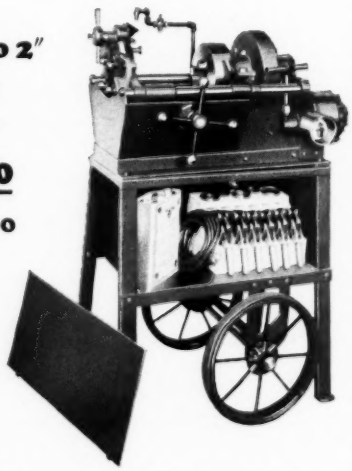
It is now equipped with rack and pinion, carriage feed wheel, thread length indicator gauge, heavy metal guard to protect the switch from damage, and a reamer mounted on an arm instantly drops into position and fed by carriage feed wheel. These improvements have been added without increasing the price of the No. 999. It has been acknowledged as the finest, most efficient, small portable power pipe machine on the market and is now more than ever with these new improvements.

Separate quick-opening die heads with adjustable dies for each size pipe assure perfect threads and instant die change. A special nipple chuck for producing close nipples can also be supplied at a small additional cost. A steel stand with or without rubber tired wheels can also be supplied.

A postcard to us will bring you complete information regarding this remarkable power pipe machine.

No. 999 – ½" to 2"
Complete
Net Price

$350.00
F. O. B. TOLEDO



Steel Stand with or without Wheels Can Be Supplied Extra

THE TOLEDO PIPE THREADING MACHINE CO.
Toledo, Ohio **New York Office, 72 Lafayette St.**

OUR INDUSTRY

April, 1934

A Greater Opportunity

Plumbing and heating now offers the business man greater opportunities for profitable development than ever before in its history. This emphatic prediction is being made more frequently by those who have studied some of the significantly new factors which are beginning to influence our industry and which promise to have an even greater influence in the next few years.

As an illustration, the code program, on which our industry is just embarking, may or may not accomplish the sweeping reforms which underlie much of the planning of the NRA. But these codes signify a reshaping of American business life. The scars of the depression are deep enough to compel changes both in business and social standards. Those industries which like plumbing and heating supply products making for higher living standards have a guarantee of growth. The new America will be better housed.

In giving the American public better housing, the plumbing and heating dealer is going to have much better products to offer. Thousands of engineers, designers, manufacturers and salesmen have used the past few years in trying to develop new products with higher standards of convenience and comfort and lower levels of first cost and operating expense. The small home has appeared to many of America's leading business men as the most profitable channel for expansion. That is why we are finding so many new names appearing among the makers of plumbing and heating goods.

As a part of a necessary industry whose products the public is learning more and more to appreciate and desire, the dealer in this industry can face the future with confidence. Outside influences are all in his favor. His own efforts will decide the result.

This Month's News

Settle Code Dispute

The disagreement between plumbing contractors and wholesalers over their codes was satisfactorily adjusted about the middle of March. As a result, both groups have been busy since then working to secure NRA and presidential approval of their respective codes.

The two groups had been in disagreement since the middle of January when the wholesalers' code was submitted to the NRA without a definite provision covering sales at retail. The difference in viewpoint was brought out at many meetings throughout the country during the following two months. As finally worked out, the various provisions under discussion were modified, bringing the two groups into a harmonious and active effort to secure the prompt approval of their individual codes.

The principal manufacturers already are operating under their code and final action at Washington on the retailer and wholesaler codes will bring the entire industry under the NRA code program.

Manufacturers Now Under Code

Although the plumbing fixtures manufacturers' code has been in operation for but little more than a month, there has been much progress made under it, according to observers.

Nearly all of the manufacturers have filed the required notarized labor report showing the adjustments in their payrolls between June 16, 1933, and Feb. 16, 1934. These are being checked, and any code violations which may be discovered will most likely be turned over to the proper NRA compliance agencies, together with complaints against those who are delinquent in filing their reports.

Under the code, manufacturers must publish to their customers and file with the Code Authority all of their prices, terms and conditions of sale. They can not sell thereafter on any other basis. This is what is called an open price plan, and its purpose is to eliminate secret discriminatory prices by enabling every customer to know the price at which every other customer buys and every manufacturer to know the price at which all his competitors sell. While this falls far short of price fixing, it is hoped that it will promote stability.

Most companies have already filed the required price information, and the Code Authority is distributing it to all competing manufacturers.

Much other information necessary for the successful operation of the code has been called for by the Code Authority and is coming in rapidly.

Since the Code Authority conference in Washington March 5-8, the NRA enforcement machinery has been stepped up considerably. More power is being given to the Code Authorities with the assurance that the NRA national and state compliance directors, the department of justice, and the federal trade commission will stand squarely behind them. It is believed that the period of lax code enforcement by the NRA is past.

On March 17, the Plumbing Fixtures Code Authority received official authorization from the NRA to "Handle Trade Practice Complaints on Reference." This means that the state NRA directors will turn all trade practice complaints received by them over to the Code Authority for handling. If the Code Authority is unable to settle a case, it will then be handled, in turn, by the state and national compliance directors. When warranted by the facts, the case will be prosecuted either by the department of justice or the federal trade commission.

Complaints of code violations may be made either to the Code Authority of the Plumbing Fixtures Industry, American Bank building, Pittsburgh, or to the State Director of the National Emergency Council for the state in which the manufacturers' main office is located. Complaint blanks and the addresses of the state directors may be obtained at any post office. The name of the complainant is kept confidential.

With the Code Authority issuing explanatory bulletins on the code to all of the manufacturers, the educational work is proceeding rapidly, and there should be few occasions for filing complaints.

Code Hearing April 12

General Hugh S. Johnson of the NRA has issued a notice of a hearing in Washington April 12 on the proposed code for the heating, piping and air conditioning industry. This notice points out that "The above industry (a division of the construction industry) as represented by the Heating, Piping and Air Conditioning Contractors National Association claiming to represent 87 per cent of the industry by volume of business and 15½ per cent by members of the industry as defined by said proposed code, has submitted a proposed supplemental code of fair competition."

Expect Big Crowd At Washington

Officers of the National Association of Master Plumbers are busy with preparations for the 52nd annual convention at Washington, May 28-31. The exposition will be held simultaneously and is attracting many exhibitors, according to reports from association headquarters.

Based upon the unusually large attendance at state conventions, predictions that the Washington national convention will attract delegates and members from all over the country seem well founded. The great increase in membership of the national association during the past year is practically a guarantee of a large crowd.

Code developments are relied upon to bring a big attendance. A likelihood that the contractors' code will be operative by that time will compel the attendance of leaders in state and local activities as a means of learning

in Brief —

more of the procedure which must be followed in carrying through the code program.

A year of exceptional activity in association work, combined with the location of the association's headquarters at Washington, is another element relied upon to attract a large crowd.

Washington figures so largely in business and political activities that it offers a definite attraction to visitors. In addition its location close to the eastern centers of population offers an advantage in attracting attendance.

Barrett Offers Code Program

On March 7, Robert J. Barrett, president of the National Association of Master Plumbers, speaking before the Conference of Code Authorities and Trade Association Code Committees said in part:

"In the plumbing industry, the NRA attempted to effect the vertical co-ordination of production, distribution and retailing. They were unsuccessful because the three parties concerned were not satisfied to do only the things for which they were naturally adapted, but desired rather to extend their activities into profitable fields in which they hoped to gain a profit while saddling the risk of losses on the regular member of the functional group they invaded. In short, manufacturers wished to perform distributing functions; distributors wished to perform retailing functions; and retailers desired to enjoy distributing advantages without distribution responsibilities. Further the failure of this co-ordination was partly due to the policy of NRA which sought to squeeze the industry into the mold of a preconceived distribution pattern, rather than to adapt the co-ordination to existing practices and practical possibilities. It is my belief, however, that, despite the failure in this one industry which was partly the result of a desire to take care of one's self and to disregard the rest of the industry, the idea was fundamentally sound and should be attempted again in an organized way by the administration."

Heating Contractors At Atlantic City

The Heating, Piping and Air Conditioning Contractors National Association through its offices in New York City, announce that active work is under way in preparing the program for its annual convention at Atlantic City, N. J., May 22 to 25. In view of the questions brought up by the adoption of the code for the construction industry and problems which will result from putting into operation the code for heating, piping and air conditioning contractors, a good attendance is assured.

Robert D. Williams of Baker, Smith & Co., New York, is president of the Heating, Piping and Air Conditioning Contractors National Association. Joseph W. Fitts is secretary. They are preparing an instructive program.

Atlantic City naturally offers unusual advantages for a convention. In addition this year, the plumbing contractors are meeting in Washington on the following week, offering contractors interested in both branches of the business their first opportunity in years to attend both conventions with a minimum expenditure of time and money.

Order Faulty Plumbing Corrected

Intensive study of the relationship between plumbing and health is bringing action in different parts of the country. In Chicago, particularly, health authorities in running down the cause of an epidemic placed the responsibility on defective plumbing. Result —crews of inspectors are checking plumbing installations there and ordering poor ones promptly corrected. This condition is countrywide and will aid in securing better codes and better code enforcement all over the United States.

Name Construction Code Authority

The Construction Code Authority established under the code of fair competition for the construction industry includes in its membership representatives of many branches of the industry. Robert J. Barrett, president of the National Association of Master Plumbers, is a member of the Authority as well as a member of the executive committee. Robert D. Williams, president of the Heating, Piping and Air Conditioning Contractors National Association is a member of the Authority and also of the finance committee.

Stephen F. Voorhees is chairman, John P. Hogan, vice chairman, F. P. Byington, treasurer and J. W. Follin, secretary.

GROUPS IN CONSTRUCTION LEAGUE

The other members of the Authority represent the following groups: Construction League of the United States, American Institute of Architects, American Society of Civil Engineers, Associated General Contractors of America, Building Construction, Highway Construction, Railroad Construction, Public Works and other types of Construction, International Society of Master Painters and Decorators, Inc., Cement-Gun Contractors Association, National Building Granite Quarries Association, Contracting Plasterers International Association, Tile and Mantel Contractors Association of America, National Elevator Manufacturing Industry, Roofing and Sheet Metal Industries Conference, Mason Contractors Association of United States and Canada, American Road Builders Association, National Association of Metal Furring and Lathing Contractors, Asbestos Contractors National Association, National Association of Building Trades Employers, National Association of Builders Exchanges, American Construction Council, National Electrical Contractors Association.

Members appointed by the administrator are: Michael J. McDonough, president, building trades department, American Federation of Labor, Washington, D. C.; Jeremiah D. Maguire, president, Federation Bank & Trust Co., New York; and George R. Dempster, Knoxville, Tenn. These men represent the federa administration.

Sell remote control water heating was the keynote of a portion of the discussion at the recent Midwest Regional Gas Sales Conference of the American Gas Association, held in Chicago. This article was read there

Controls

IN the spring of 1928, when the building of small homes was beginning to gain impetus, there were many small outlets promoting the sale of automatic storage type water heaters.

At this time, also, we discontinued our special efforts on remote controls for gas-fired circulating tank heaters. It may be interesting to know that while no special effort was made by us to sell these remote controls, there were over 3,000 of them sold from April, 1928, up to January 1 of this year, while from 1924 to 1928 there were but 6,000 sold. There were possibly another 4,000 or 5,000 of these controls sold by plumbers and dealers located within our territory since 1924.

Now, as an encouragement to the proponents of automatic gas-fired storage type water heaters, I might mention that through our special efforts along this line we increased our sale of gas-fired automatic heaters by several hundred per year. The maximum year being 1930 when over 900 automatic water heaters were sold as contrasted with 285 in 1927.

In order that we might analyze our potential market for water heaters, our meter readers made a survey of the water heating equipment in Milwaukee homes early in the year of 1932. The results of this survey, in round numbers, are as follows:

Out of a total of 140,000 consumers in metropolitan

Milwaukee, there were installed at that time 80,000 gas-fired circulating tank heaters and 10,000 automatic gas-fired water heaters. 50,000 homes were found to be without any kind of running hot water service. Of these 50,000, which were without hot water service of any kind, there were 10,000 homes where there was no suitable plumbing for the installation of a water heater.

It seems inconceivable that any great percentage of these 50,000 homes would be prospects for automatic water heaters. They must of necessity be prospects for the circulating type of water heater and possibly a remote control. In these homes, where perchance money is scarce, the weekly bath is a luxury and it is our problem to make this weekly bath a necessity in the minds of these people.

As a result of this survey and of our appreciation of the financial conditions prevailing, we again put special effort upon the sale of circulating water heaters and remote controls. For this purpose we enlisted the aid of all of our employees and a special crew of straight commission salesmen. All of our employees attended a course of three lectures designed to acquaint them with the features and selling points of this equipment in order that they might be more effective in contacting prospective buyers.

During the five months, starting with June, 1932, during which this special effort was conducted, our salesmen and employees sold 1,101 circulating tank heaters, 112 hand-controlled storage units, 91 automatic storage type heaters, 236 clock type remote controls, and 33 pull-up type remote controls.

It seems needless to recount the history of water heating from the lowly tea kettle through the circulating water heater, remote control, and the instantaneous and storage type water heaters. During the days from 1925 through 1930, there were thousands of people whose incomes were sufficient to warrant their having the benefits of automatic water heating service. During the past few years, however, these same people's incomes have been reduced to such an extent that they can no longer enjoy these advantages.

A goodly number of these people are now hand-operating their storage type heaters—a very inefficient method, since the entire tank must be heated for a small amount of water—while the remainder have their heaters shut off completely. Of this latter class there are doubtless many who have returned to the hand-controlled circulating water heater with its attendant economy but lack of convenience, while others have had tank heaters installed on their storage heaters.

Such a picture confronts us at this time. Are we going to attempt to put special effort on the sale of automatic water heaters, or are we going to spend most of our efforts in the sale of circulating type water heaters and remote controls? We are, at the present time, of the opinion that the latter is the proper course for 1934.

The fact that many new types of remote controls for circulating water heaters are now being placed upon the market is good evidence that there are more people of the same opinion. There is now on the market a remote control for circulating water heaters which can be so set that the heater will go on in one's absence at a predetermined time. This feature obviates the necessity of rising at an early hour in order that hot water might be available for one's morning bath or shave even with a lowly tank heater.

The manner in which these remote controls are sold is a rather important one. It seems that the idea of making one's own gas bill is the most important feature to be stressed.

To illustrate Milwaukee's acceptance of remote con-

(Continued on Page 126)

Sell Water Heating

By J. B. Druse

"Practically all tank heaters are installed in the basement and the inconvenience of going downstairs to light it and another trip to shut it off eliminates its use many times. A convenient control upstairs will help to meet the demand for comfort."

Losses are Changed to Remodeling Foreclosed

An example of what has been, and what is being done goes a long way toward establishing what can be accomplished

DURING the years of depression a great deal of attention has been directed toward the subject of modernizing and rehabilitating the type of building which has a shell too good to tear down and rebuild but whose itnerior and equipment has reached the age and state of absolescence whereby the building as a whole no longer can be rented so as to bring an adequate return on the entire investment. Of course, the general answer is to modernize the interior and to make an asset out of what, in its original state, was little more than a liability.

The Eleventh Ward Building and Loan Association of Newark, N. J., offers an unusually fine example of what may be accomplished along this line when the matter is attacked in an intelligent and far sighted manner and the practice is applied in a big way. The situation with this organization as the depression years began coming along was that property after property on which loans had been made had to be taken over as the owners failed to make the payments in accordance with their contracts or where the mortgages ran out and could not be paid or replaced elsewhere. After these properties had been taken over the question immediately arose as to how they were to be operated.

THE REASONS FOR THE PLAN

The building and loan company is not a real estate organization but is purely a mortgage company which secures its funds from shares taken out by subscribers who agree to pay a certain sum monthly on these shares and this money is invested by the loan company in mortgages in accordance with their judgment; after a number of years the payments on the shares, plus the profits made on the investment of the money, accumulate to an amount sufficient to equal the "matured" value of the share and the share holder then receives in cash the par value of his share. Consequently there ordinarily is no organization to collect rent, make repairs, supervise or otherwise physically operate the properties on which loans are made, the loan company ordinarily standing in the same relation as a bank or any other mortgager on real estate.

Due to the almost unprecedented conditions which began in 1930 following the stock market panic of 1929, properties commenced to be foreclosed and what was to be done with such properties became a question demanding an immediate answer. Three lines of procedure offered themselves; first, to throw the properties on the open market selling them for whatever could be obtained and taking a chance on receiving net returns from the sales of sufficient amounts to reimburse the association

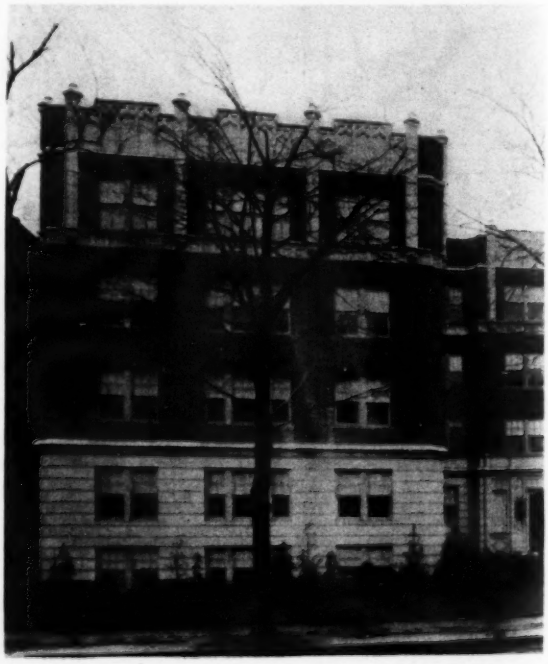


Fig. 1—An exterior view of one of the apartment buildings which was handled in the manner described here

. . . a Profit by Apartments

under similar circumstances. Here are instances of the economic soundness of remodeling

for the money advanced on the buildings; second, the holding and operating of these buildings just as they were and without endeavoring to improve them with the hope that the income obtainable would be sufficient to pay the carrying charges until such time as the market improved and the buildings could be disposed of; and, third, the rehabilitation of the buildings to bring them as far as possible up to a favorable comparison with modern buildings so that they would be equal desirability and equivalent rentals would be obtained.

The first of these propositions seemed a forlorn hope, and the second looked not much better; the third offered possibilities that, if carried out in an intelligent and economical manner, the buildings could be carried for an indefinite period, would be self-sustaining and might even show increased rentals or occupancy sufficient to pay the cost of the remodeling and renovating, or at least part of this cost, before resale became a possibility.

Up to date about $5,000,000.00 worth of property, housing some 2,000 tenants, has been brought from an average occupancy of about 70 per cent up to an average occupancy of about 87 per cent (due to the more desirable living conditions which resulted) with increased rentals due to the added percentage of occupancy plus some small increases due to the remodeling, etc.

Among the properties were several apartment houses, about fifty two-family houses and other miscellaneous construction, most of which was speculation built and contained many faults (largely due to poor arrangement and thoughtlessness in the construction work) which defects did much to make the rooms undesirable and yet with small changes were remedied to a considerable extent, even if not entirely. Before long this reconstruction involved a force varying from fifty to one hundred and fifty men.

This article simply is a chronicle of what was done and the experiences of the Eleventh Ward Building and Loan Association in carrying out their program in connection with the particular conditions existing in the buildings taken over and is related to the fuel costs in Newark and vicinity.

HEATING EQUIPMENT UNDERSIZED

Mr. Benjamin F. Hurd, who is president of the association, and who is himself a practical builder of many years of experience and who worked with a practical architect, states that, aside from the usual redecorating and painting, the most common trouble which they found with two-family houses was the fact that the builders had installed a boiler just sufficient to heat the ground floor and had installed another boiler of exactly the same size to heat the second floor. Owing to the cold roof over the second floor, every time severe cold weather was experienced, the second floor could not be kept sufficiently warm and consequently tenants could not be secured, or if secured, would not remain in the house.

In a number of cases it was necessary to tear out the boilers serving the second floors sell them for what they would bring, and to reinstall new boilers of greater capacity. This was accomplished with little difficulty as the boiler change was confined to the basement, or cellar, and nothing on the upper floors was disturbed. Mr. Hurd also states that in the apartments all sorts of fuel were experimented with including various grades of oil from light to heavy, various sizes of coal from stove to rice. For their local conditions they now use buckwheat coal fired on pinhole grates, with a small undergrate blower. Generally they use the blower only when it is necessary to force the fire, such as in the morning and during very cold weather.

Another general change which was made in the apartments was the cutting out of the central refrigerator supply furnished by the owner and the substitution of

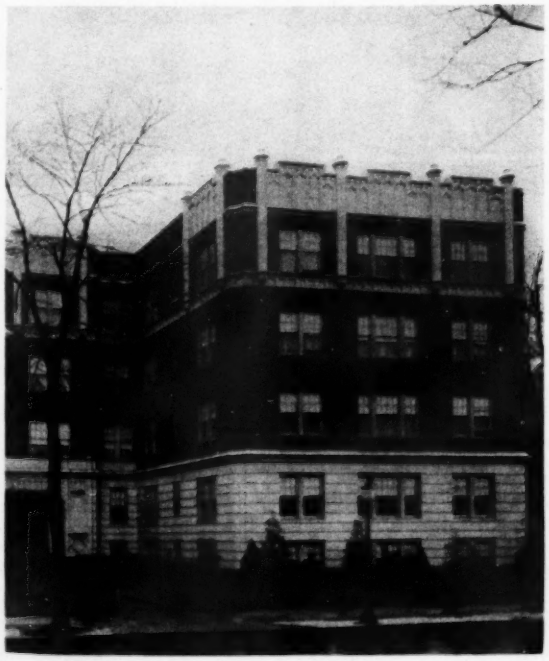


Fig. 2—"A common complaint in apartments consisted of cases where the gas stove and kitchen fixtures were placed in a small alcove"

individual, electrically operated refrigerators supplied with current from the tenant's own electric supply. With this arrangement the tenant pays the cost of operation and is likely to be more careful of wastage such as occurs when the refrigerator doors are left standing open for long periods and there are no complaints of the way the system is operated, the time when defrosting is done, and so on, because the tenant has the absolute control of his own refrigerator.

SOME OF THE PROBLEMS

Another general item which was very serious, says Mr. Hurd, was that of the water piping which in many cases in the older buildings was found to have a free area through the pipe sometimes no larger than an ordinary lead pencil. This piping was replaced with a pipe selected to be suited to their water conditions.

Still another very common complaint in apartments consisted of cases where the gas stove and kitchen fixtures were placed in a small alcove or niche and doors, or a curtain, placed across the front of the fixtures so closely that the doors, or curtain, had to be opened in order to use the stove or sink. The result of this was that the cooking odors immediately permeated the entire apartment giving rise to a very undesirable condition. This was solved by placing a glass panel partition around these fixtures with a working space in front of the fixtures but shutting off the fixtures from the rest of the apartment.

Numerous other features were gone into on the various buildings being somewhat individual in each case but among these might be mentioned the placing of storm sash on all of the north side and west side windows to protect against the cold northwest winds of winter. This resulted in keeping many apartments and rooms on these sides comfortable during cold windy weather which otherwise would have been cold.

The program which has been carried out has awakened widespread interest, parties have come from long distances to investigate and marvel in what has been accomplished, the relatively small cost involved, and the unusually large returns shown as a result. That this is so may be largely attributed to the way in which the proposition was handled and the fact that the association had the necessary funds with which to make the investment before any returns were received. The entire program has been under the direct control of Mr. Arthur F. Smithurst, Secretary for the association, and no interference with his method of attack has been permitted. He has decided (in consultation with the architect) as to what was most necessary and has prompted the work, in the most economical way that can be conceived. Where, in the old days, the walls used to receive a coat of sizing and three coats of paint, now the walls receive one coat of sizing and one coat of very heavy paint. Where floors used to be sanded and given two coats of shellac, now they are sanded and are given one coat of a special floor finish which they have found wears better than shellac and lasts longer. Every possible corner has been cut so as to produce the maximum desirability at the minimum cost and certainly the returns, as shown on the books, indicate that this has been a highly profitable procedure.

Fig. 3—Here is another of the buildings in this group which was remodeled to change the operating losses to profits

The costs of the revamping are not added to the value of the building. On the contrary they are carried along as part of the expense of the building being gradually paid off out of the income; should the building be sold before this has been done the cost of repairs is added to the amount of the loan on the building and unless this amount is received, no sale will be made. As the buildings now are in a position to pay their own way as they go, the association can operate them and hold them for an indefinite period without any farther investment or cost—certainly a happy solution and one showing a far-sighted and financially sound business policy.

How to Heat the Detached Garage

Fig. 1—The above house and garage represent the general conditions outlined in the discussion of this article and are typical of many throughout the country

By Harold L. Alt

"I have been called in to install a heating system for a garage located about seventy feet in back of the residence it serves. A new heating plant has been installed in the residence and outlets have been left on the hot water boiler. What is the best way to do the job?" This is typical of inquiries on this subject and this article is made to answer it

A FACTOR which often enters the matter of heating system design to annoy and perplex is that of the isolated garage which the owner wants to heat from his general heating plant and which is situated 50 to 100 ft. distant from the house. He usually does not desire a great deal of heat but wants enough to insure against freezing the radiator on his car during cold nights. In spite of this, the garage usually is so cheaply built and has such large and poorly fitted doors that the amount of heat required seems considerable.

The garage problem may be solved in several ways. Whether or not it is practical to attach the garage to the house heating system usually involves several items most of which relate to levels and the type of heating in the residence. If the matter of levels can be solved there still remains the question of how to get piping over to the garage and back again. The conditions which may exist in regard to the heating system in the house are the level of the boiler in comparison to the outside grade and garage level and whether hot water, gravity one-pipe steam or vapor is used in the house.

With a gravity hot water system used in the house the matter of the level of the garage is not of as great importance as when gravity steam or vapor is employed. It is of great importance however to obtain a proper circulation over to the garage and back and for this purpose it is advisable to carry a line up as high as possible in the house and then drop back down until the level of the horizontal supply main running over to the garage is reached all as illustrated in Fig. 2.

In running such a hot water connection it is necessary to vent the high point of the loop either by carrying a small vent pipe from the top of the loop to spill over the expansion tank as shown in the illustration or—if the water heating system is a closed system with a tank in the basement—by putting a small air chamber on the top of the loop with a pet cock on the top for releasing the accumulated air from time to time. After the pipe has been dropped back to the cellar it should be run out through the cellar wall and pitched up from the

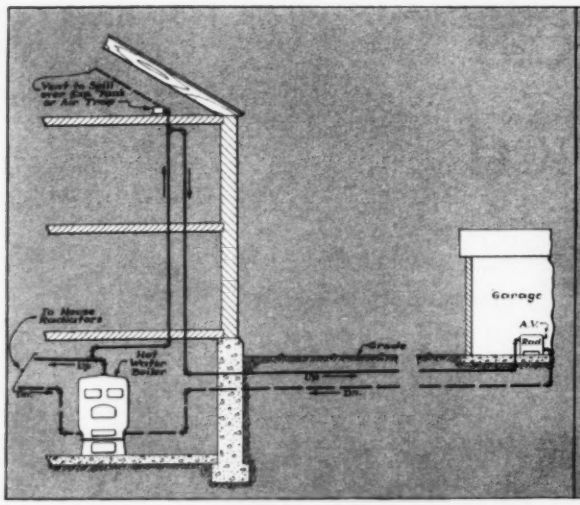


Fig. 2—The set-up for heating a garage with a house hot water heating system is shown above

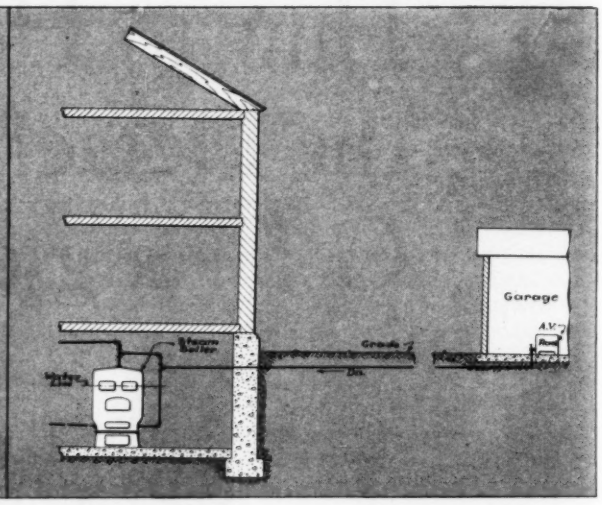


Fig. 3—Above, a gravity type steam system with plenty of headroom. Fig. 4—Below, an indirect water heater is used

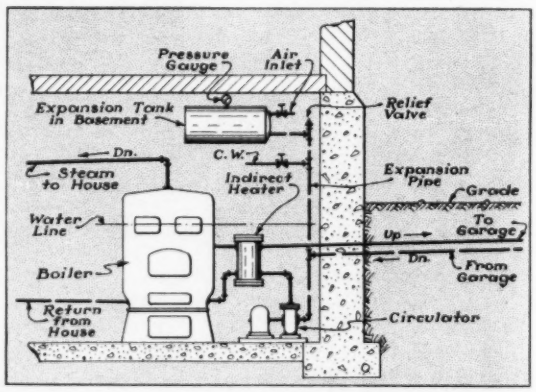
bottom of the drop until it rises up to connect with the radiator. In this way all of the air in the underground lines will be carried along with the water flow and will rise up in the garage radiator where an air valve must be located.

When a one-pipe gravity steam system is in use in the house care must be taken not to get the line running over to the garage so low as to flood it. While it is not necessary to carry this connection to the top of the house as was done with the hot water system, it is necessary that the line be kept above the boiler water line and to facilitate this the scheme shown in Fig. 3 is suggested, as it has several advantages. In the first place by taking the branch off of the boiler itself, or off of the steam main directly above the boiler, it is possible to get full boiler pressure without any material drop due to pipe friction; the connecting of this branch into the boiler return as indicated insures that there will be no appreciable rise of the water line in the return from the garage radiator. Consequently if only a few inches can be obtained above the boiler water line for the start of the branch running over to the garage this will be sufficient.

GRADE FOR THE BRANCH

The branch should be run at the maximum grade possible so as to drain back the return which is likely to be rather heavy due both to the garage temperature being down around 35 deg. Fahr. or 40 deg. Fahr. as well as the line itself being run through a cold trench between the house and the garage.

If the outside grade is such that the line to the garage cannot be covered and still keep it a few inches above the boiler water line at the low point there remains the possibility of dropping the boiler to secure this necessary distance by the construction of a pit and the locating of the boiler therein. This is illustrated in Fig. 6, but in many cases is considered objectionable especially when a coal burning boiler is used. The carrying of the coal down into the pit when firing the boiler and the removal of the ashes from the pit are both inconvenient so that this should be avoided in coal burning equipment. In that case the only other solution is embodied in the use of indirect heaters.



The advantage in the use of indirect heaters lays in the fact that they may be installed below the water line of the boiler and still function whereas a steam connection taken off at such a level would flood and would not circulate. The way in which this can be done is illustrated in Fig. 7 and it will be seen that the indirect heater is simply attached to the boiler in a submerged position as high as possible and then the hot water supply and return mains are run over to the garage in the same manner as illustrated in Fig. 2 with similar pitch and air valve on the radiator. Of course the radiator will have to be figured as a hot water radiator and should be made somewhat larger than calculated due to the fact that the water circulated may not be up to 180 deg. Fahr. as ordinarily is assumed with hot water radiation.

In case that a good pitch cannot be obtained when the indirect heater is installed, or a branch is taken direct from the hot water heating main, the use of a circulating device may be necessary on the return pipe in order to draw the water around the circuit. This would only require the smallest size of circulator manufactured and a throttle valve should be installed in the return line

so that the circulation device will only move the proper amount of water required for the garage and not rob the gravity circulation for the house itself. How this can be installed is indicated in Fig. 4.

With a vapor steam system in the main building the garage can be heated in the same manner as illustrated in the scheme for a one-pipe gravity steam system except that two pipes must be carried over instead of one and the return must come back high enough to enter the automatic return trap and main return without water sealing the garage return line. This is illustrated in Fig. 5, but usually proves impossible to install. The return cannot enter at a lower point because if it does not get into the main return no air relief is secured and if a separate air relief is provided for the garage return only, the boiler water will be driven back into the garage return whenever there is pressure on the boiler.

This leaves the situation so that, if the levels prevent the use of the scheme shown for vapor heating, the next solution is that of the indirect heater arranged in exactly the same manner as explained for the gravity one-pipe system; the necessity of an expansion tank on the water circuit should not be forgotten and the tank should be located about ten feet or more above the top of the radiation in the garage as was indicated in Fig. 7 or a tank-in-the-basement may be used as illustrated in Fig. 4.

Where a vacuum system is to be used as a supply for the garage radiator usually there is very little difficulty with either the steam main or the return line owing to the fact that the vacuum pump in all probability will be located on the basement, or cellar, floor and will be low enough to drain the drip from the steam pipe even if this line must be located below the boiler water line and also will be low enough to receive the return from the garage almost at any level which this line must take.

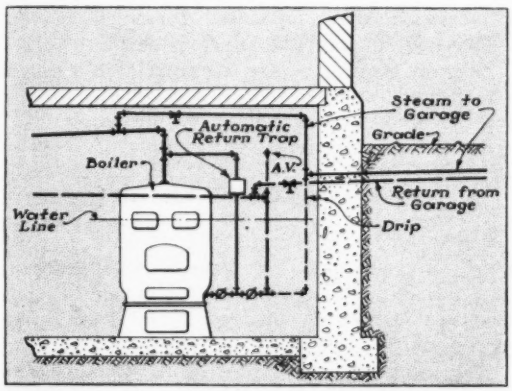


Fig. 5—Connections for a vapor heating system are shown above. Fig. 6—Below, a one pipe steam job with the boiler pitted because of lack of headroom. Fig. 7—Indirect heater used on steam boiler

HEATING WITH A VACUUM SYSTEM

An example of a garage hooked up with a vacuum system is given in Fig. 8 and it will be noted that this is the simplest of all heating systems to be applied in this manner. It is unfortunate that on the smaller installations vacuum is used so seldom but sub-atmospheric systems are coming more and more into vogue on some of the better class of work and these may be connected up in the same manner as illustrated for the vacuum system remembering that the sub-atmospheric system does not permit the use of a lift on the return line in any instance.

In calculating the radiation required for a garage a temperature of 40 deg. Fahr. inside against the minimum outside temperature is generally considered sufficient temperature to maintain but, as previously stated, the garage is often so flimsily built, and the doors are so large and liable to warp and twist, that a safe practice seems to be to figure the building the same as an ordinary frame house with an inside temperature of 40 deg. Fahr. and then to double this to allow for door leakage and poor construction. Another rule-of-thumb is to figure the garage for 80 deg. Fahr. inside and trust to Providence to get 40 deg. Fahr.; this, of course, is where the minimum outside temperature goes to zero and in localities where this low temperature is not reached the rule becomes to use twice the temperature rise expected in order to get half the temperature rise calculated. For example, in a locality where the lowest outside temperature reaches 20 deg. Fahr. the garage would be expected

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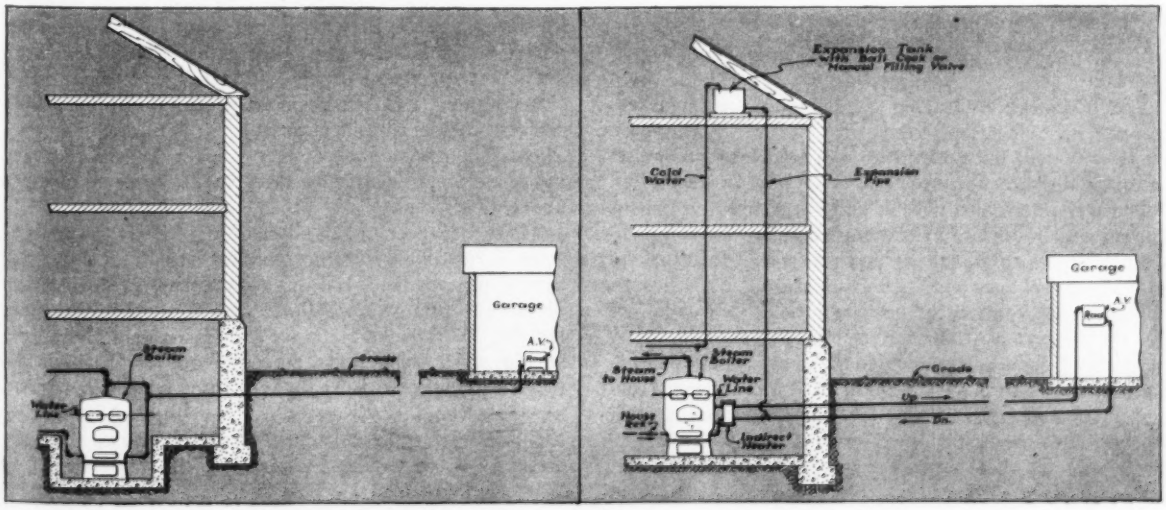


Government Survey

to Show Need for

Plumbing and Heating

Reports released on housing conditions investigated in farm and rural districts

FACTUAL information concerning the physical condition of residential structures in 63 selected cities will soon be available to the plumbing industry as a result of a study now being conducted by the Bureau of Foreign and Domestic Commerce, Department of Commerce, and which is designed to provide badly needed facts concerning housing in the United States.

This study, known officially as the Real Property Inventory, is being conducted under the supervision of Willard L. Thorp, Bureau Director, with the cooperation of the Census Bureau. The Inventory is a project of the Civil Works Administration and the 5,000 men and women engaged therein have been taken from the rolls of the unemployed.

The study, in particular, will reveal much information concerning the condition of the plumbing enumerated in the 63 cities where the field work has been conducted.

For instance, each enumerator will record the presence for each house visited of running hot or cold water or both or the complete absence of running water. The number of installed bath tubs and separate showers not built over baths will also be recorded. Private indoor water closets will also be counted.

SURVEY NEARING COMPLETION

The Inventory is nearing completion. Field workers are now sending their enumerations to Washington where they will be received by a special department set up under the direction of D. E. Casey, the project chief.

These enumerations will be routed through the Census Bureau which will use its elaborate and ingenious punching machinery for breaking down and coordinating and visualizing the facts obtained from them.

The Inventory penetrates a virgin field. Never before has the Government offered to the plumbing industry statistics of such inherent value. The study will provide the industry with a picturization of the plumbing situation in 63 key cities, thereby creating an index that may be applied to the rest of the country. The plumbing industry can use these figures to gauge its sales campaign, to estimate need for the manufacture of warehouse stock and to establish within itself a planned economy.

Mr. Thorp stated that the inventory will go a long way toward remedying difficulties, for it will afford actual knowledge of local conditions in detail.

"The great good to be derived from such a program will be lasting," said Mr. Thorp. "It will enable private enterprise, guided by real property inventory data, to save itself from past errors."

FOUR TYPES OF INFORMATION

The inventory will ascertain and record four general types of information in the house-to-house canvass in the 63 cities to be surveyed; (1) Number of houses, their occupancy, vacancy, their population density, family units and extent of doubling up; (2) general data as to the type of building, material of construction, condition, age, and those not habitable and fit for the wrecker; (3) improvements, sanitary equipment, elevators, heating apparatus, gas, electricity, water supply and refrigeration; (4) financial data to include rentals, property values and ownership.

The data should have value for Congress in planning legislation; to the Federal Home Loan Board and other public and private credit agencies as a basis for more intelligent extension of credit; to local communities in city planning and tax revision projects; to real estate dealers, builders and contractors in business planning. According to Mr. Thorp, this project will assist recovery in the building industry by supplying a source of hitherto unassembled data.

There has been much discussion recently concerning some form of aid for the building industry. But when several persons meet and discuss the matter, they quickly divide into two groups—those who argue that there is a housing shortage, and those who insist that there is a surplus of housing units, according to Mr. Thorp. The individuals who take the latter position offer three forms of evidence: the great activity in construction during the years from 1923-1929, the high percentage of vacancy reported in most cities, and the fact that rents

have fallen considerably. All these indicate, they argue, that we are well supplied with housing facilities, and it would be absurd for the Government to endeavor to revive activity in this field at the present time.

Others claim with equal insistence that a shortage exists, Mr. Thorp stated. They claim that the post-war activity merely made up for the lean years during the war. They say that the high percentages of vacancies are spurious, being more than offset by doubling up and delayed marriages, so that with return of prosperity the shortage will become uncomfortably apparent. This they state, will lead inevitably to another period of overbuilding. Finally, they insist that there are many houses now occupied which are not fit to live in.

Is there a surplus or shortage of housing? That is exactly what the Government hopes to find out, along with a good deal more, from the Real Property Inventory.

The 63 cities in which the inventory is being conducted comprise a population in excess of ten million, every state being represented by at least one city. The cities are of different sizes, ranging from small to large places and represent different types of development and different industrial characteristics.

Among the cities that so far are included in the Real Property Inventory are the following:

Arkansas: Little Rock, Metropolitan District.

California: San Diego, Metropolitan District; Sacramento, Metropolitan District.

Alabama: Birmingham, Metropolitan District.

Arizona: Phoenix.

Colorado: Pueblo.

Connecticut: Waterbury, Metropolitan District.

Delaware: Wilmington, Metropolitan District.

Florida: Jacksonville, Metropolitan District.

Georgia: Atlanta, Metropolitan District.

Idaho: Boise.

Illinois: Peoria, Metropolitan District; Decatur.

Indiana: Indianapolis, Metropolitan District.

Iowa: Des Moines, Metropolitan District.

Kansas: Topeka; Wichita, Metropolitan District.

Kentucky: Paducah.

Louisiana: Baton Rouge, Shreveport.

Maine: Portland.

Maryland: Hagerstown, Frederick.

Massachusetts: Worcester, Metropolitan District.

Michigan: Flint, Metropolitan District; Lansing.

Minnesota: Minneapolis; St. Paul, Metropolitan District.

Mississippi: Jackson.

Missouri: Springfield, St. Joseph.

Montana: Butte.

Nebraska: Lincoln.

Nevada: Reno.

New Hampshire: Nashua.

New Jersey: Trenton, Metropolitan District.

New Mexico: Albuquerque, Santa Fe.

New York: Syracuse, Metropolitan District; Binghamton, Metropolitan District.

North Carolina: Asheville, Greensboro.

North Dakota: Fargo.

Ohio: Cleveland, Metropolitan District; Zanesville.

Oklahoma: Oklahoma City, Metropolitan District.

Oregon: Portland, Metropolitan District.

Pennsylvania: Erie, Metropolitan District; Williamsport.

Rhode Island: Providence and environs.

South Carolina: Charleston, Columbia.

South Dakota: Sioux Falls.

Tennessee: Knoxville, Metropolitan District.

Texas: Austin; Dallas, Metropolitan District; Wichita Falls.

Utah: Salt Lake City, Metropolitan District.

Vermont: Burlington.

Virginia: Richmond, Metropolitan District.

Washington: Seattle, Metropolitan District.

West Virginia: Wheeling, Metropolitan District.

Wisconsin: Racine-Kenosha, Metropolitan District.

Wyoming: Casper.

FARM HOUSING SURVEY REPORTS

As an indication of the type of information which has been collected in the Farm Housing Survey which is a Civil Works Administration Project, the following is taken from a recent release:

The Farm Housing Survey is a Civil Works Administration project, carried out by the U. S. Department of Agriculture and the State Agricultural Extension Services. The object is to provide the basic information necessary for a program of improvement for farm homes. About 300 counties throughout the country are being covered by the investigators. A preliminary report for Fayette Co., Kentucky, subject to later revision, is contained in the following:

Reports of 1,647 farm houses in Fayette County, in the Blue Grass section of Kentucky have been tabulated. The survey shows 25 log houses, 2 earth houses, 129 unpainted frame houses, 1,011 painted frame houses, 331 brick houses, 33 stone houses. There are 689 one story houses and 963 which are more than one story. An average of 6 rooms per house is shown. There were 1,704 farms in this county in 1929 and the farm population was 8,583.

CONDITION OF HOUSES

Of the 1,647 houses surveyed, replacements or renewals and repairs were needed as follows:

	Complete replacement or renewals	Repairs
Paint, exterior	360	262
Screens	329	180
Insulation	146	18
Roofs	145	328
Interior walls, and ceilings	142	441
Foundations	113	299
Doors and windows	92	346
Walls, exterior	89	321
Floors	73	293
Chimneys	42	187
Stairs	25	81

(Continued on Page 154)

Foundation for Future Business is Laid upon Welding Work

The author of this article, Wm. R. Stevens, in a recent letter tells that "Several of the contractors in this territory are doing a very nice job in industrial plants. We expect to develop quite a volume of business in the welding field."

The contractor who did the welding work described here has just written to tell us that the owners have since had welded practically

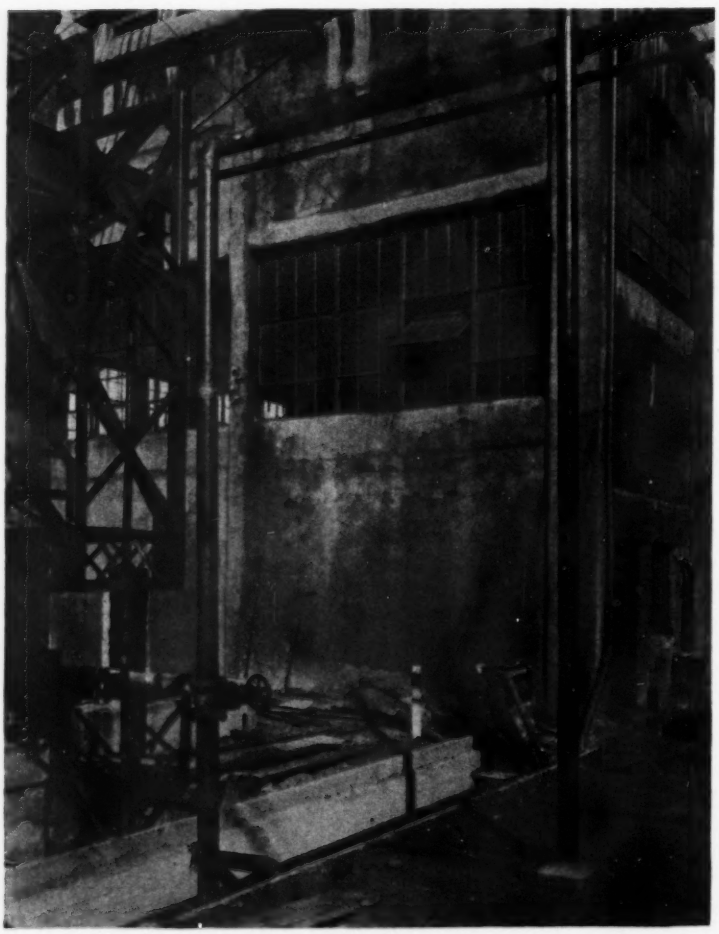


Fig. 1 — The welded pipe lines which are described in this article are shown in the view at the left. These are the same lines as those in Fig. 2 but viewed from the opposite direction

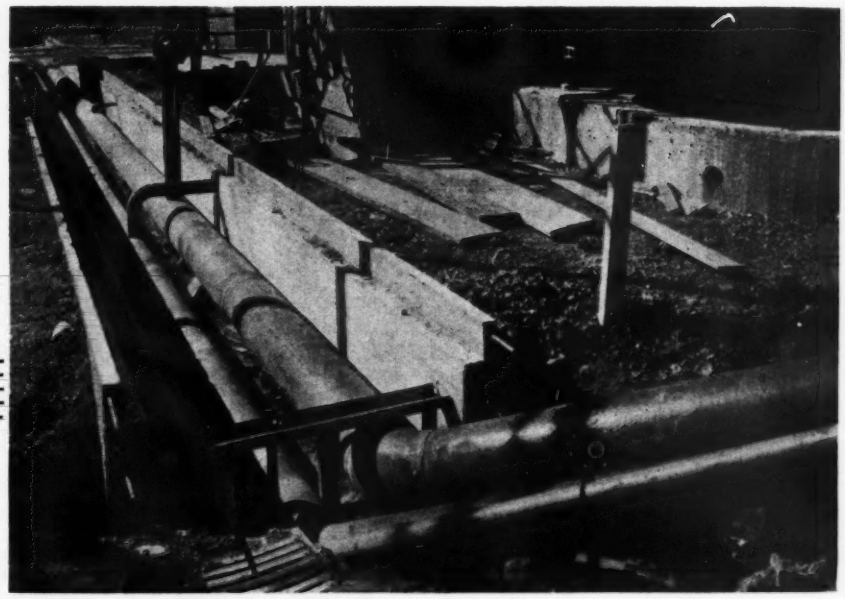


Fig. 2 — This illustration shows a number of the welding features. Note the alignment guide in the end of the tunnel. In the right foreground is an anchor for the piping

all of their pipe lines above two inches in size in a number of their out of town plants. "We ourselves see great possibilities in doing welding."

VERY rapidly the larger industrial concerns are recognizing the advantage of welded pipe installations in their plants as a means of reducing maintenance.

The accompanying photographs illustrate a welding job installed for a large Cincinnati manufacturer by a heating contractor of that city.

The manufacturing company in question employs a pipe fitting crew of five men to maintain the pipe lines through their various buildings.

Steam is transmitted from their boiler room through a 6-in., 125-lb. live steam line and a 12-in., 5-lb. exhaust steam line with a 3-in. pump discharge line. These lines run underground for 150 ft. from the boiler room to the adjoining building. At one time these lines were run overhead and were placed underground by their own pipefitting crew in an effort to eliminate the difficulty of repair work. Their troubles did not end, however, with this move but actually became more complicated.

They contracted to have the lines welded. They gave to us as heating contractors, whom they knew could weld, the job of replacing these lines. The old underground lines were abandoned.

Where these lines enter the building as shown in Fig. 1, expansion joints were installed and the lines were anchored at the building wall, just at the far side of the expansion joints. The pipe is held in alignment by the welded angle iron guide where the lines enter the trench as they leave the boiler room wall. The 5-in. vertical pipe from the 12-in. line and the 2-in. from the 4-in. branch from the 6-in. lines were added to the original contract after they saw the application of the welding to the larger lines.

We have found it takes the combined knowledge of pipe fitting and welding to make a first class welding installation. This proves that we must make welders out of our steamfitters. Our experience with the welding shop has demonstrated that the average welder makes a very poor job on pipe line welding as applied to heating installations. But the welding steamfitter makes a very good piping installation with welding.

NEW FIELDS FOR BUSINESS

Many more such industries as mentioned in the foregoing are waiting for someone to show them how to save money on their maintainance by welding.

We are looking for new fields for business in these days and at our very door lies a most fertile field. Installations which we have made now can be remodeled with welded work. Small repair jobs can be turned into large replacement jobs.

We anticipate that we have but a small start in this factory although the contract we completed ran several thousands of dollars. Before we finish, we expect every foot of pipe in the plant will be welded as the continual replacements are welded.

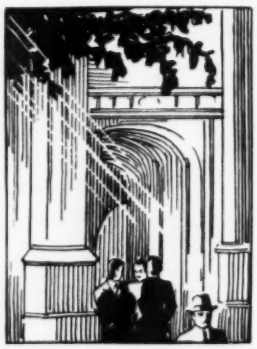
We have found these jobs need not be taken with small profits as any wide awake business man is willing to pay the price for a job that will save him money.

Why Good Plumbing and Health Go Together

A discussion of practical plumbing based on laboratory research work

By Walter S. L. Cleverdon
Associate Professor of Sanitary Engineering
New York University

THE contents of "sewer gas" or if one prefers, "sewer air," are probably never the same and they do not exist in the same proportions; but they often contain sulphuretted hydrogen (H_2S) and ammonia (NH_3) frequently as the result of the decomposition of the liquid sulphide of ammonia $(NH_4)_2S$, methane or fire damp (CH_4), acetylene (C_2H_2), oxygen, nitrogen and carbonic acid gas (CO_2). It may also contain traces of other organic matter. Of these, the following are explosive or inflammable gases when air or oxygen is present: sulphuretted hydrogen (H_2S), methane or fire damp (CH_4) and acetylene (C_2H_2).



The noxious effects of the gas are due to sulphuretted hydrogen, sulphide of ammonia and the organic matter. These compounds are always found in sewer gas or sewer air in varying quantities and are the most dangerous known in chemistry. Air otherwise pure, containing one part in 2,000 of sulphuretted hydrogen will instantly kill birds. Air, one-two-hundredth part of which is sulphuretted hydrogen, will kill dogs. A mixture of one part in two-hundred-and-fifty will kill a horse. Although it has never been practically tested, it is believed that air containing one percent of sulphuretted hydrogen will cause the immediate death of man. The sulphide of ammonia has a similar effect.

Since the number of automobiles has so increased with the consequent great number of gasoline and oil stations, to say nothing of the quantities of gasoline and oil which are washed into the sewers when streets, machine shops, and service stations are flushed, the sewer gas or sewer air contains much of this material. The traps supposed to prevent this material entering the sewer, do not always work, probably due to neglect, but of late great improvements have been made in these traps.

In addition to this, we have the old problem of the explosive gases from the sewage consisting of hydrocarbons, ammonia, etc., and the illuminating gas from the gas companies' mains.

Attempts have been made to take this sewer gas or sewer air from septic tanks as by-products to augment the illuminating gas supply. So there is no doubt as to their combustibility when in concentrated form and their explosive tendencies when well mixed with air.

It is not the concentrated form of these gases which causes explosions. That condition causes fire. The explosion is caused by air containing about 5 percent of evaporated gasoline or other inflammable gas. If this proportion enters plumbing, very serious damage may be caused by explosion. One pint of gasoline thoroughly vaporized and uniformly mixed with air will make 200 cu. ft. of air violently explosive.

The following data are taken from reports entitled: "The Explosions in Newburgh, New York, September 16, 1929. Report of G. W. Jones, Explosion Chemist United States Bureau of Mines Under the Direction of the Department of Commerce, Washington, D. C." and "Independence Bureau Summary Report on the Explosions in Newburgh, New York, September 16, 1929."

These explosions occurred in public sewers, house sewers and buildings. Damage done:

One death;

A number in hospitals seriously hurt;

Damage from external explosions suffered by twenty-five buildings, largely broken glass;

Violent explosions took place in five buildings;

Minor explosions took place in four buildings;

Estimated damage to property between $200,000 and $300,000.

"From the branches leading into the main sewer the fire spread into various basements through improper sewer connections.

"Many old drains without traps carried explosive gas into buildings causing explosions.

"Modern sewer connections of cast iron pipe with deep traps and proper vents are effective in keeping sewer gas or other vapors out of buildings. No building with such plumbing and tightly sealed basements had any difficulty in either of the two explosions. (A similar explosion took place in 1928). The Copans,

Cassidy, Queen and Stern Buildings, which had defective plumbing or unsealed basements and suffered in the 1928 explosion, and which put their plumbing or basements into good condition, did not suffer from the 1929 explosions."

One of these reports states that the trouble was caused by illuminating gas, while the other claims it was due to gasoline. One gathers from the reports that there was enough of both gases to cause explosions. However, it makes little difference to the dead man or the owners of damaged property what form of gas caused the trouble.

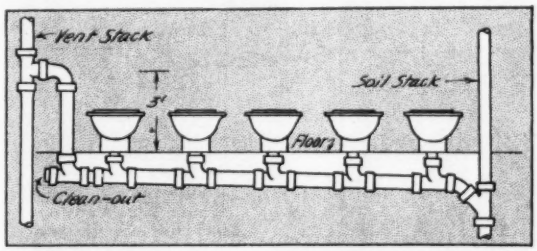


Fig. 1—This shows a combination of venting and sewage discharge which is permitted by the United States Government

It is up to the master plumber to keep gas and fire out of the house sewer; and as far as possible, prevent explosions entering the property in that way.

A great deal of discussion has arisen over the value of the house trap. The "Hoover Code" recommends its omission. In fact, it has been shown that the house trap actually interferes with the flow of sewage and that if it were omitted, the stacks of the building would ventilate the public sewer.

The resistance to flow caused by the house trap as computed from the results of our experiments and other reliable data should not exceed a head of one foot with a 12-in. line 100 ft. long under ordinary conditions.

There is no advantage to the property owner in ventilating public sewers, let the city take care of that. The risks to which he may be exposed due to many dangerous compounds which are found in sewer gas or sewer air, are not to be overlooked.

As to the ability of the house trap to protect the property from explosions entering the house sewer from the public sewer, it will at least reduce the force. This is based on the facts that in the New York University laboratory, when producing water hammer which is a form of severe shock, we found it became greatly reduced by causing it to pass around two 90 degree bends or elbows. A trap would constitute approximately four 90 degree bends. When high explosives are stored in deep tunnels in order to protect life and property, the magazine is located about 50 feet or more from the main tunnel with a zig-zag tunnel passing from the main tunnel to the magazine. This zig-zag tunnel is nothing more than a series of traps.

In view of the above facts, the writer recommends keeping the house trap and keeping it well ventilated.

The necessity for properly protecting all the trap seals also is apparent in view of the slight reduction in atmospheric pressure necessary in the drainage line to cause the trap to siphon.

Our laboratory work shows plainly the necessity for keeping the atmospheric pressure in the drain, soil and vent lines equal to that outside, in order that the slight unbalaced pressure amounting to three ounces or less might not be set up in the plumbing lines, siphoning the traps.

There is a tendency in sewage disposal piping to cut down the sizes of pipes or omit them altogether. This applies particularly to vent pipes. In the case of the water supply pipes, the sizes frequently are too small, resulting in poor supplies.

Our attention has been called by J. L. Murphy to the conditions shown in Figures 1, 2 and 3. Figure 1 shows a combination system of venting and sewage discharge which is permitted by the United States Government. The soil stack is at one side of the battery of fixtures and the vent on the other, while the horizontal line to which the fixtures are connected acts as a combination vent and soil or drain line. This installation has one weak point even when first installed. For example, the branches from the individual fixtures to the combination horizontal pipe must be over two feet long due to construction, and when not supplied with an individual vent, are similar in location to a trap on the highest fixture in a building with a branch over two feet long without an individual vent. This is not allowed by the New York City Code as it causes self-siphonage. When one thinks of the slight reduction in atmospheric pressure necessary to siphon a trap, it must be very plain to him that the trap or traps are bound to siphon where the line becomes clogged between these fixtures, cutting off the air required to balance the atmospheric pressure on these fixtures farther down the line. It is pointed out in the "Hoover Code" that as the horizontal lines become fouled and corroded, the greater the tendency for self-siphonage, sufficient air not being able to enter the line. This applies equally to what is commonly referred to as "loop venting" shown in Fig. 2. A stoppage between the up-stream fixtures and the ones below prevents air from entering the pipe, thus causing an unbalanced pressure and siphonage. It is said frequently that the 4-in. branch from the water closet to the 4-in. horizontal line cannot plug it. While the piping is new this may be correct, but as time goes on the 4-in. pipe will rust, decreasing the water-way, retarding the flow, which in turn causes deposits. In other words, while the branch from the water closet remains fairly constant,

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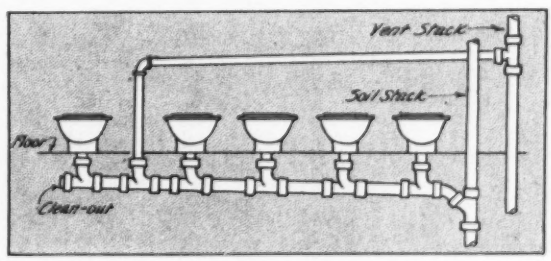
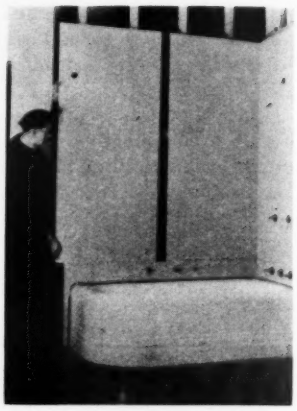


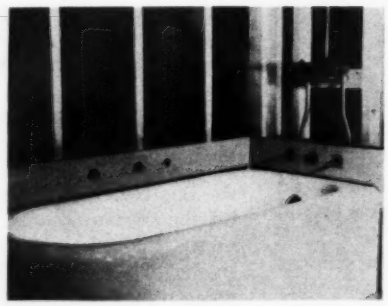
Fig. 2—The arrangement shown here is what commonly is known as loop venting. A stoppage may cause unbalanced pressure and siphonage of the traps by stopping air flow

Step by Step Plan for Remodeling Shows New Type Units

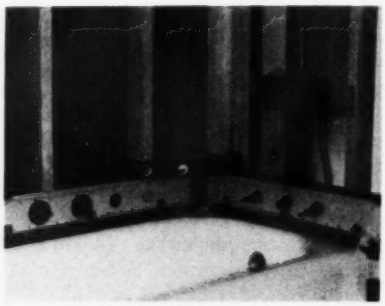
Finished Wall Panels are Erected Complete

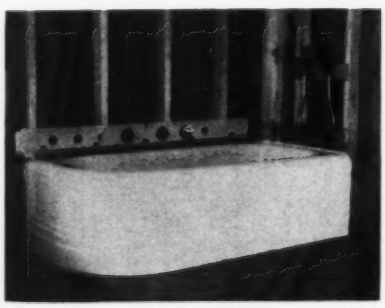


Left, the shower panels are hooked over the bath unit cover. Above, two back shower panels are being slid into the two clips attached to the rear side of the panels



This shows the back and end covers installed. They are connected by means of a small clip designed to give a water tight joint where they meet in the corner



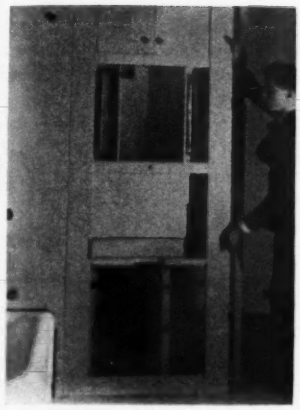


Above is shown the addition of the end chassis At the left, after the tub is in place, the back chassis is put in place as shown.

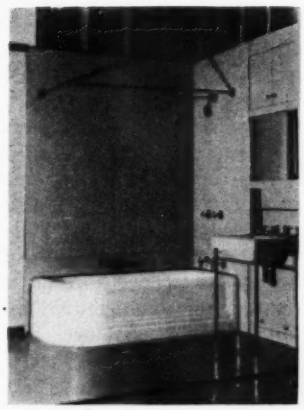
REMODELING offers the avenue for the development of plumbing and heating business which many dealers are using to profitable advantage. The market for our industry's products in homes and structures already built is tremendous. A definite cause of today's opportunity in the remodeling market is the number and variety of products developed in the past few years designed to encourage and accelerate replacement of old products.

A factor of importance in approaching this remodeling field is the simplicity and speed with which improvements can be made and for that reason engineers and designers have given their attention not only to the simplification of building units for new work but for remodeled jobs as well. The pre-fabricated utility panels illustrated in these pages are said to be the first designed to have immediate adaptability to existing building conditions, both in remodeled and new work.

These units have been displayed in the laboratory of the bureau of design development of the American Radiator & Standard Sanitary Corp., New York. In that demonstration a shower and bath is installed in approximately 45 minutes by only one man and a helper. This 45-minute period is not offered as a standard but



Left, here the lavatory panel consists of medicine cabinet, lighting, and storage cabinet. It is attached to the shower unit by means of clips at the back of the section



Both the illustration at the right and the one at the lower right show the complete installation. The polished soft metal moulding is made to fit all shapes and variations of tubs encountered

it serves to emphasize the simplicity with which these panels can be assembled.

The following outline of the design of these panels, the method of assembly and their purpose is presented by the designer and manufacturer, George Sakier of the Accessories Company, Inc., Division of the American Radiator Co.

"The unit panel system is composed of a series of sound-proof, water-resistant steel panels. Each panel, within its own construction, accommodates the piping for the bathroom lavatory, tub, or shower. This, of course, makes it unnecessary to incorporate into the building of the bathroom the thick wall which usually provides space for concealment of supply and waste pipes, or to break into the existing walls in order to install new fixtures when remodeling a room. Each unit is, in itself, a complete wall section fitted with whatever accessories, fittings, etc., are necessary to that portion of the wall. The lavatory unit, for example, combines in a single panel the medicine chest, lighting, and even an overhead compartment for towels and other bathroom necessities. Each panel can be used either as a single unit or as interlocking sections to form a bathroom complete even to accessories and decorative finish.

"This new development does not call for any departure from standard plumbing practice. The piping is installed, the chassis is put in place, the panel is attached to the chassis and then the tub or lavatory is hung. Any wall treatment, waterproof or not, can be used for the rest of the room, since the panel provides the necessary water-resistant area around the actual fixtures.

"The primary intention behind the design of these units is to overcome the old-fashioned methods of plumbing installation necessary when the elements that make up a bathroom must each be separately purchased and separately installed. Because the units correlate the fixtures, fittings and accessories necessary to each section of the wall within one panel, the installation process is thereby scientifically improved and simplified with attendant lowering of labor costs.

"However, the 'lower labor cost' does not, in the case of these unit panels, apply to the plumber, but is a point of interest to the builder who has heretofore been accustomed to calculating a large percentage of each building dollar as taken up by waste of time and mate-

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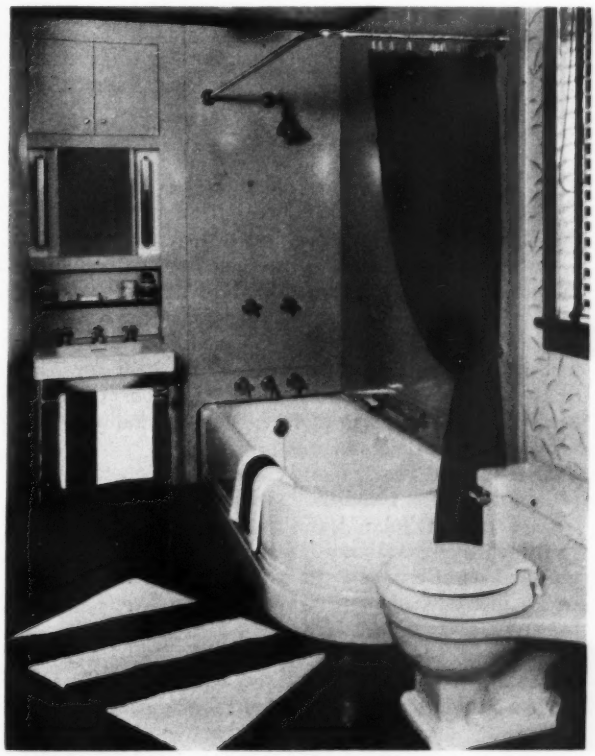


Protest Federal Competition on Plumbing Repair Work

RELIEF work by the government under the CWA plan was so handled in some localities as to draw protests from plumbing contractors. These protests resulted from a practice of having plumbing repairs made free of charge by untrained men, frequently for home owners capable of paying for such work. The result was the definite slowing down of the jobbing or repair work upon which many master plumbers rely.

A letter of protest was recently forwarded by the Chicago Plumbing Contractors' Association to Harry L. Hopkins, national administrator of CWA at Washington, relative to journeymen plumbers entering private homes and buildings to make repairs to the plumbing system. This letter later was referred to H. O. Hunter, field representative of the CWA in the Chicago territory.

In his letter to Mr. Hopkins, President Charles E. Gawne of the Chicago local association, called attention to the fact that since journeymen plumbers started going into homes to make repairs several weeks earlier, the business of the licensed master plumber, who is depending on repair work for a livelihood, has been practically at a standstill.

He stated that a grave injustice and irreparable damage had been done to the master plumber through the method employed by the local administrator, in having workmen enter private homes and dwellings. This placed the government in direct competition with a group of its citizens who are required to pay an annual renewal fee to the municipality in which they operate as well as execute a bond to the city in the sum of $10,000 and pay numerous other taxes to support the city, state, and national governments.

PROTEST IS NATION WIDE

On behalf of the master plumbers, Mr. Gawne said, it was never the intention of the government to invade the field of private industry, but if federal funds were to be used as they were then being used to repair the plumbing inside of buildings and private homes, then this work should be done under the supervision and direction of licensed master plumbers, in order not only to comply with the local ordinance and state laws, but to give the master plumber, who is as much in need of work as the journeyman plumber, an opportunity to participate in the benefits of this project.

The National Association has received numerous complaints from its membership throughout the country, Vice President John J. Calnan recently pointed out, regarding the operation of the Civil Works Administration and its effect upon the master plumber. Members whose interest had been seriously affected were advised to enter a protest.

"From all the information at our disposal," said Mr. Calnan, "we understand that the activities of the Civil Works Administration will be curtailed during the next few weeks, and while we admit that the C. W. A. has done an immeasurable amount of harm to our business in many localities, particularly in the large industrial centers where they have even gone so far as to enter homes and buildings for the purpose of repairing the plumbing, we feel that relief is in sight and we will not have to contend with this problem very much longer."

PERMIT FOR ALL PLUMBING FIXTURES

The importance of proper supervision of plumbing installations is being more widely recognized by public health authorities. All authorities should be made aware of this relationship between plumbing and health. Mr. Calnan recently called attention to the promiscuous sale of plumbing fixtures by those who "fail to realize that the sale of a plumbing fixture is not fully consummated unless at the time the sale is made steps are taken to see that the sale does not result in a menace to public health or enable the purchaser to violate the sanitary laws.

"The solution of this problem as I see it, is to bring the sale of all plumbing fixtures and appurtenances having a sewer or water connection under plumbing code regulations, by providing that all plumbing materials by whomsoever sold, shall only be to a licensed master plumber, who alone is qualified and responsible under the law to properly install same. This would place all on the same competitive basis, if supplemented by a proper retail price level, and the other conditions proposed in our Code of Fair Competition.

"This thought is based on the same principle underlying the sale of drugs to the consumer, and in my opinion, is the only consistent and safe argument for us to propose and fight for, if we are to remain master of our own business and are to continue to advance our science and be in a position to enable the health authorities to effectively enforce the law.

"The sales made direct to the consuming public at prices far below which the master plumber can purchase similar materials from his regular source of supply, is not only unfair competition, but is resulting in breaking down the laws of the board of health governing the installation of plumbing.

"If sales of plumbing products by mail order and direct-to-you houses are to be recognized under the Code of Fair Competition, why should they not assume the same responsibility and be subject to the same rules and regulations governing the installation of plumbing fixtures as are the licensed master plumber?

"The sales of plumbing products by these concerns direct to the public should be periodically reported to the Board of Health in preventing dangerous plumbing installations and in our various states and cities, we should work for the enactment of laws and ordinances which will compel the sale of plumbing fixtures of direct-to-you and mail order concerns to be properly regulated and supervised."

PROPERTY OWNERS
!BEWARE!
"The Unlicensed Plumber is a menace to Health and Property"
Deal only with Licensed Plumbers . . . they are responsible and dependable
This Educational Campaign sponsored by the Kings County Master Plumbers' Association, Inc.
OUR MOTTO: "DEAL WITH OUR MEMBERS AND ENJOY CONFIDENCE AND SECURITY"
HOME OWNERS BEWARE!

Above is a reproduction of the poster used in the educational effort

Campaign Tells Benefit of Plumbing License

Ten Reasons for the Master Plumber Deserving Preference

IN an effort to educate the property owner to patronize and deal exclusively with the licensed master plumbers, the Kings County Master Plumbers' Association, Inc., of Brooklyn, N. Y., recently distributed 75,000 pamphlets entitled "The Licensed Plumber Stands on Guard Between Civilization and Its Foemen: Fire, Cold, Draught and Dirt," and listing the ten reasons why the licensed master plumber deserves preference, as published in the April, 1933, issue of DOMESTIC ENGINEERING.

In connection with this campaign each member is also displaying a large blue-print poster, 24x37 in., in his window, bearing the legend:

"Property Owners, Beware! The Unlicensed Plumber Is a Menace to Health and Prosperity. Deal only with Licensed Plumbers; they are responsible and dependable. This Educational Campaign is sponsored by the Kings County Master Plumbers' Association, Inc. Our Motto: Deal With Our Members and Enjoy Confidence and Security."

The Kings County Association has received many letters from building department heads and others, praising and congratulating its officers and members for their initiative.

President Alex Rotker says that some members of the association report that many customers prior to the receipt of the pamphlet were entirely ignorant of the distinction between a licensed master plumber and an unlicensed plumber. He expresses the hope that other associations will follow the example of the Kings County Association and thus help to make the public realize the importance of dealing only with licensed master plumbers.

For the convenience of officers of other associations who may wish to follow suit, we repeat herewith the ten reasons suggested by DOMESTIC ENGINEERING as follows:

1. The license, secured only after a hard examination, is official recognition of his successful training.
2. The license indicates ample experience. It can not be secured until a man has been a journeyman plumber for* ——— years.
3. The license is an indication of a man's pride in his craft.
4. The license is an indication of good citizenship—it shows that the man who holds it respects the local ordinances.
5. The license is your protection. No man may retain his license if his work does not measure up to the standard demanded by the city laws.
6. The license is evidence that the city officials recognize that plumbing and health are closely related; and that the man who holds the license works with that fact before him at all times. As it has truly

*Fill in your state.

been said: "The Plumber Protects the Health of the Nation."

7. Under the license a man is termed a "Master Plumber"—a master of his craft.
8. The license indicates an intention to remain permanently in business, so that you are assured of immediate service on products *purchased locally.*
9. The licensed master plumber is the officially recognized local outlet for nationally advertised plumbing products because leading manufacturers recognize the importance of proper installation as the main need of the public.
10. The licensed master plumber has back of him the prestige of the local association—which is interested in maintaining a high standard of service.

Health—

(Continued from Page 39)

the pipe to which it is connected, is reducing in area of cross-section as it remains in service. Fig. 3 with the individual vent to each trap is the only sure way of preventing the siphonage of fixtures.

Those in favor of loop venting have indicated that the extensive use of hot water today can be depended upon as a much greater factor in keeping such lines clear, than could have been done many years ago.

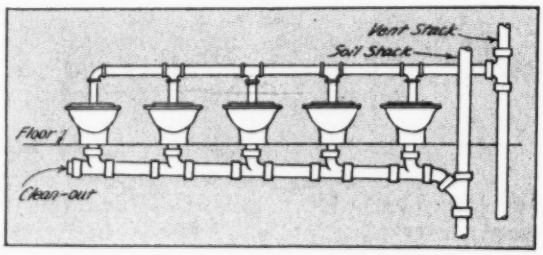


Fig. 3—This shows an individual vent to each trap and is the only sure way of preventing the siphonage of fixtures

There are no hot water connections to batteries of water closets.

While hot water may help to remove grease from a line, it will increase corrosion as one readily knows who has examined both the hot and cold water lines of a building where corrodible piping is used. The hot water line always becomes clogged with rust first.

In long loops of loop systems some advocates suggest that they be vented in two or more places. Ordinarily this would cost more than individual venting and would be of little or no value.

In Figs. 1 and 2 the branches to water closets should not be made at the top but should be connected at the side, for the reason that the horizontal branch is acting in the dual capacity as a soil line and vent. The discharge from the closet would, therefore, interfere with the flow of air.

In Fig. 3 this condition does not obtain as the horizontal branch merely is required to act as a soil line, the individual vents supply sufficient air to equalize pressures.

Garages—

(Continued from Page 33)

to maintain 40 deg. Fahr. or 20 degrees higher than the outside; to calculate, the garage would be figured for a difference of 40 degrees, as this is twice the actual difference expected to be developed. Again where the minimum outside temperature goes to 20 deg. Fahr. below zero the garage at 40 deg. Fahr. would be 60 degrees above the minimum outside and should be calculated for twice this or 120 degrees difference. (See Note.)

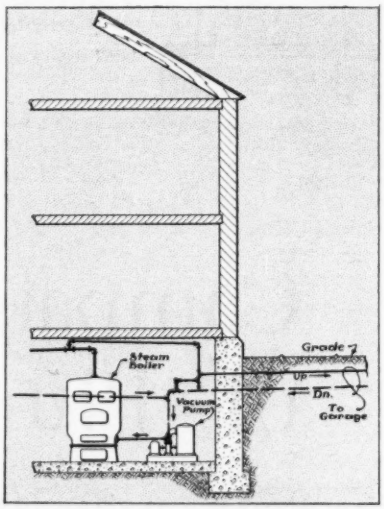


Fig. 8—Typical example of a garage hooked up with a vacuum system

In using indirect heaters where the ratings are in gallons of water raised 100 degrees in a three-hour period the number of Btu. developed per gallon of rating per hour will be

$$\frac{\text{Gal. of Rating} \times 8.33 \text{ lb.}, \times 100 \text{ deg. Fahr.}}{3}$$

or

278 Btu. per gal., of rating

and an indirect heater rated at 100 gallons of water for example would supply

278 Btu. × 100 or 27,800 Btu. per hr.

whereas in heaters rated on an hourly basis the delivery would be three times as much or

278 Btu. × 3 × 100 or 83,400 Btu. per hr.

NOTE—The radiator when set in a temperature of 40 deg. Fahr. will be somewhat more efficient than when standing in a room at 70 deg. Fahr. and this increase will approximate for steam

$$240 \times (215 - 40) / (215 - 70) \text{ or } 296 \text{ Btu.}$$

while for water the increase will amount to

$$150 \times (175 - 40) / (175 - 70) \text{ or } 193 \text{ Btu.}$$

and these efficiencies may be used in ascertaining the radiation required after the total Btu. loss has been calculated.

While sizing the heating equipment necessary for garage heating is rather an uncertain proposition the fact that the temperature demands are not usually very exacting does away with a lot of the difficulty and if a temperature reasonably well above the freezing point can be maintained without materially altering the operation of the house system this generally is considered satisfactory.

Constructed of
COPPER AND BRONZE THROUGHOUT

PENBERTHY AUTOMATIC ELECTRIC SUMP PUMPS

Maximum Capacity 3600 Gals. per Hr.

Model K
Made in 5 Sizes
Retail Price
Size No. 1 K)
$65.00

Maximum Capacity 1400 Gals. per Hr.

Model 33
Made in 1 Size only
Retail Price
$39.50

Their performance is as superior as the materials from which they are made. There is a Penberthy Pump for every purpose . . . and to suit every pocketbook.

PENBERTHY INJECTOR COMPANY
Manufacturers of Quality Products Since 1886
Detroit, Michigan **Windsor, Ontario**

PENBERTHY PRODUCTS

SELECT THE PUMP THAT SUITS THE PARTICULAR CONDITIONS . . . DON'T TRY TO SUIT THE CONDITIONS TO A PARTICULAR PUMP

NRA

PENBERTHY AUTOMATIC CELLAR DRAINERS
(Water and Steam Operated)

MODEL S
Made in 1 Size Only
Maximum Capacity
600 gallons per hour
Retail Price . . $14.50

MODEL R
Made in 2 Sizes

	Max. Cap. gal. per hr.	Retail Price
1R	720	$25.00
2R	1240	40.00

MODEL L
Made in 3 Sizes

	Max. Cap. gal. per hr.	Retail Price
3L	1650	$ 55.00
4L	2400	80.00
5L	3200	110.00

PENBERTHY PUMPS REMOVE SEEPAGE WATER

Trace Epidemic to Faulty Plumbing

PLUMBING and its relation to health is gaining widespread recognition as a result of some interesting developments in Chicago. Health authorities in that city, who have traced the cause of an epidemic of amebic dysentery, place the responsibility squarely on faulty plumbing facilities.

John J. Calnan, Chicago, vice president of the National Association of Master Plumbers, has interested himself in this development and has called the attention of plumbers all over the country to the importance of placing this information before state authorities. In this way, proper and adequate plumbing codes can more easily be secured in those states without plumbing laws and at the same time more effective legislation can be secured where imperfect codes now are on the statute books.

Dr. Herman N. Bundesen, president of the board of health of Chicago, talked on "Plumbing and Health" at a meeting of more than 600 members of the plumbing industry of Chicago, March 2.

The meeting, one of the largest in years, was attended by contractors from a radius of 200 miles around Chicago, by journeymen, wholesalers, and manufacturers.

The speakers, in addition to Dr. Bundesen were: Mr. Calnan; Joel I. Connolly, chief inspector of the bureau of sanitary engineering of the city of Chicago; Charles E. Gawne, president of the Plumbing Contractors' Association of Chicago; Henry P. Reger, president of the Illinois Master Plumbers Association; Joseph Carroll of the Standard Sanitary Mfg. Co.; Thomas J. Claffey of the bureau of sanitary engineering; William Kern, business agent of the Chicago journeymen plumbers union; and Alderman Terrel of the 29th ward, chairman of the health committee of the city council.

NAMES PUBLIC ENEMY NO. 1

The representatives of the contractors, journeymen, and wholesalers pledged their aid to Dr. Bundesen in his fight to end the peril of amebic dysentery caused by defective plumbing.

Following are high spots in the remarks made by Dr. Bundesen:

"Plumbing, long the step-child of medicine, is coming into its own.

"The New Deal for the plumber is here—he is recognized as the protector of the health of millions.

"It is dangerous to entrust plumbing work to anyone except a licensed and qualified plumber.

"Public enemy No. 1 is the handy-man and jack of all trades who attempts to do plumbing. These unqualified men and those who thoughtlessly employed them are largely responsible for the epidemic of amebic dysentery in Chicago."

At Waterloo, Iowa, in March, Mr. Calnan emphasized the importance of this subject. He said:

"In this connection, it might be well to call to your attention the report of the committee of eminent physicians appointed some weeks ago at the request of Dr. Herman N. Bundesen, president of the Chicago Board of Health, to investigate the outbreak of amebic dysentery in Chicago during the summer and fall of last year. This committee after investigating all possible angles of the epidemic placed the principal blame upon faulty, old fashioned plumbing facilities. These facilities permitted water to be contaminated and it was from contaminated water, the committee found, that the disease originated.

"The committee of physicians met in Chicago the latter part of January. The studies were not confined to Chicago, but covered cities hundreds of miles away. The cases of some 800 persons afflicted with the disease were considered. The committee devoted considerable attention to two principal points of infection. Both these places, hotels catering to thousands of people, were found to get most of their water supplies from the city water mains. In both places the committee discovered:

"1. Old and generally defective water and sewerage piping layout, potentially, at least permitting back siphonage of a number of fixtures, such as bath tubs and flush toilets, into water lines.

"2. Chance breaks in sanitary sewers or heavy overflows of mixed sanitary sewage and storm water drainage in and outside of basements.

"3. Cross connections of serious character between water and sewer lines or between water lines carrying potable water and water potentially subject to contamination.

John J. Calnan
Vice President of the National Association of Master Plumbers

"The meeting attended by 600 members of the plumbing industry of Chicago was held on March 2nd and was addressed by Dr. Herman N. Bundesen, who emphasized the danger of entrusting plumbing work to anyone except a licensed and qualified plumber. He at-

ELKAY *Presents*—
The AMBASSADOR

WITH the approach of spring and summer, home owners everywhere are becoming more and more shower-minded. They want the healthy exhilaration which the shower bath provides them . . . and you'll find they constitute a live market for the Ambassador. The Ambassador appeals from the standpoint of price as well as appearance. It fits in perfectly with remodelling plans. Push Ambassador Shower Bath Stalls now and share in the worth while profits which go with every installation.

ELKAY MANUFACTURING CO.
4704-14 ARTHINGTON ST., CHICAGO, ILL.

Features THAT *Sell*

POPULAR PRICE

Priced sensibly, the Ambassador comes well within the range the average home owner can afford to pay.

◆

EASE OF ASSEMBLY

Assembly of the Ambassador may be accomplished by one man in half an hour. The only tool required is a screw driver. To facilitate entry through narrow doorways and passageways the entire unit is shipped knocked-down and because of its light weight it may be conveniently handled. Assembly is made from the inside; may be set up in a space no larger than the stall itself.

◆

RUST RESISTING

Side walls of the Ambassador are of galvanized steel; the receptor is made of heavy gauge, copper bearing steel and is hot galvanized after fabrication. Absolutely rust-proof.

◆

MECHANICAL FEATURES

Anti-splash rim on receptor keeps water from splashing on floor. Walls are flush type permitting installation against flat walls. Leak-proof construction throughout. All fittings are cast brass, chromium plated.

NRA

WE DO OUR PART

MAIL COUPON FOR IMPORTANT DETAILS

ELKAY MANUFACTURING CO.,
4704-14 ARTHINGTON ST., CHICAGO.
Please send your interesting folder describing the Ambassador All Steel Shower Stall.

Name .....

Address .....

City ..... State .....

That BACK-SYPHONAGE Question!

For more than ten years the Sloan Valve Company has been furnishing Royal Flush Valves with a flush connection having an air-break with no moving parts, to certain foreign countries requiring such a preventive of back-syphonage.

This Venturi flush connection was originally designed for fixtures that developed but little back-pressure. Our improved Venturi flush connections are suitable for fixtures that develop either high or low back-pressure.

Sloan Flush Valves with this Venturi flush connection are available to those desiring a non-mechanical air-break that is open to the atmosphere at all times.

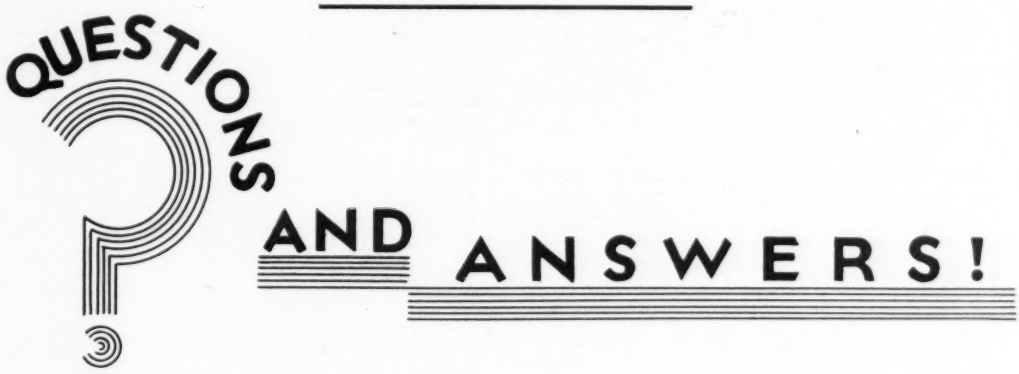
Venturi Tubes • • Vacuum Breakers • • Syphon Preventors

SLOAN VALVE CO • Chicago

tributed the blame for the epidemic of amebic dysentery in Chicago to the handy man and jack of all trades

"A survey is now being made by 36 sanitary engineers to discover violations of the plumbing ordinance in the city of Chicago, particularly with reference to cross connections in hotels, office buildings, apartments and industrial establishments. The conditions discovered are by no means peculiar to Chicago.

"Our national president is considering the advisability of recommending the appointment of a joint national committee composed of representatives of our association and the medical profession."



1—

To the Editor:

In reading the December issue of Domestic Engineering, I notice under Questions and Answers, J. R. P. of Pennsylvania has difficulty in heating water continuously when he hooks the top circulating pipe of an indirect heater into the top side connection of a range boiler.

I have known for years that an indirect heater with the flow connection hooked to the side tapping of a range boiler will not heat water satisfactorily, and have changed a great number so hooked up, that did not give satisfaction, but when hooked to a tee at the top of the boiler gave excellent results.

I do not believe air lock has anything to do with this failure to heat, but perhaps it might be caused by insufficient circulation head, as on a few recent jobs where I have kept the indirect heater as low as possible, I have had no complaints as to lack of hot water.

New Jersey. C. R. J.

To the Reader:

Thank you very much for your letter of December 14th. We always enjoy receiving comments from our readers regarding material which is published in Domestic Engineering.

As for your analysis of the problem which was presented to us by a Pennsylvania reader, we wonder how you account for the fact that when this reader broke the flow connection from the indirect heater to the upper side tapping of the range boiler, near the range boiler, air was released and when the connection was made again, circulation was resumed for about a day until more air accumulated at that point.

As you know, air is lighter than water and unless it is confined in a pocket, it will rise to the top of the water. These are the facts which made us believe that our Pennsylvania correspondent's trouble came as a result of an air pocket in the flow-line between the indirect heater and the range boiler. Of course, air would form in such a pocket as a result of air being given off when the water became heated in the indirect heater.

Your point about the circulation head being of great importance in the effectiveness of a water heating system is entirely correct and cannot be stressed too strongly. While it may have contributed to the difficulty experienced by our Pennsylvania reader, we are quite sure that it was not the main cause.

If you have further ideas in this matter which tend to modify our conclusions, we shall be glad to receive them.

1. *Reader comments on question and answer published in a former issue regarding water heating arrangement which would not operate continuously.*
2. *How can old metals be retinned? We sent to London, England, for this answer.*
3. *A range boiler and an automatic storage water heater—how should they be connected together?*
4. *Steam and water supply piping filled with oil. What should be done to clean it?*

2—

To the Editor:

Please inform us the proper proportion of metals and acids necessary to retin old sheet steel utensils such as old milk cans.

Texas. N. P.

To the Reader:

Your inquiry was referred to the International Tin Research and Development Council in New York City and they in turn referred it to the research staff of that council in London. Their suggestions are contained in the following:

"The cans are first cleaned mechanically with sand. Any grease that may be present is removed by treating with caustic soda and steam jets. The object is then immersed for about 2 minutes in 13 per cent hydrochloric acid solution kept at 170 deg. Fahr. It is then

transferred to a tank of "killed spirit" (zinc chloride) and thence to the first tinning bath, which is maintained at 585 deg. Fahr. The tinning bath is sometimes divided into two portions by a bridge which does not reach the bottom of the bath. The article, wet with flux, then enters one side of the bridge and is withdrawn from the other side. The time of dipping varies with the size of the object; it is about 2 minutes for a milk churn.

"From the first tin bath the object is transferred to a tallow pot kept at the same temperature, where it is allowed to soak for about half a minute. The object is then carried to the second tinning bath, at a temperature of 475 deg. Fahr. where it is immersed for about half a minute. This followed by a dip for half a minute in a "draw pot" containing tallow at 475 deg. Fahr., which smooths out the tin coating. The article is finally quenched in a furnace oil, cruder than kerosene, kept at 120 deg. Fahr. The object is then cleaned with sawdust and inspected."

3—

To the Editor:

No. 1 tank is a regular range boiler of 40-gal. capacity connected to a fire pot coil. No. 2 tank is a 20-gal. natural gas automatic water heater.

The coil keeps tank No. 1 fairly warm, but at times when tank No. 2 is put into use (it is hot at all times) it takes about two hours to heat the heater for a bath; when No. 2 tank is turned on it heats No. 1 tank at the same time. How and why is this?

Would your advice be to remove tank No. 1 altogether, and connect tank No. 2, to the coil, at points A and B shown on No. 2 tank? These tanks are about 12 in. apart with the average city water pressure of 50 lb.

Nebraska. W. M.

To the Reader:

It is difficult to understand how heated water can circulate from the automatic storage water heater and into

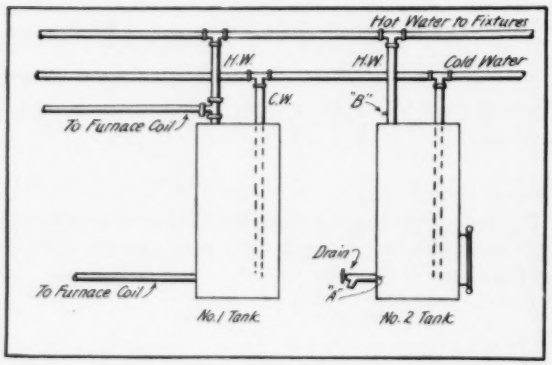


Fig. 1

your tank heated by a coil as a result of the arrangements you show in your drawing. There are a number of ways to make the installation you have in mind. We show one of them in the accompanying sketch. In this case, the fire pot coil heats water in the first range boiler. When the hot water faucet is opened, water is drawn out of the automatic storage water heater tank and this is replaced by water from the range boiler which already is heated by the fire pot coil. This means that the load on the automatic storage heater is reduced by the amount that the fire pot coil heats the water. With this arrangement, it is necessary for the water to pass through both tanks before it reaches the faucet.

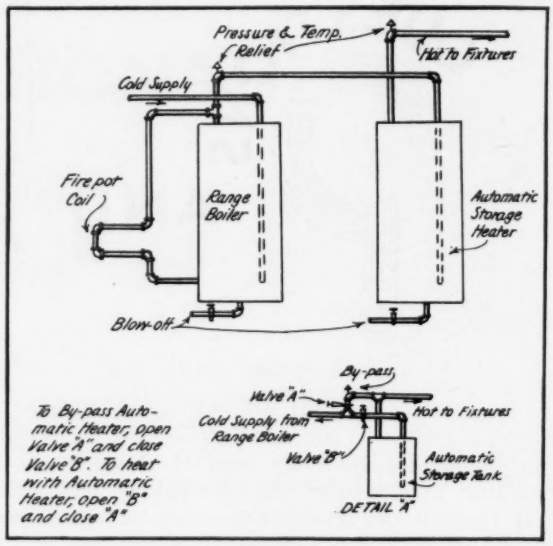


Fig. 2

With your arrangement, the water can pass through either one or the other of the tanks. The arrangement shown in our sketch has the added advantage of making the first range boiler a settling tank so that water relatively free from foreign matter is supplied to the storage heater. This, of course, tends to keep the inside of the storage heater clean and free from deposits which would reduce the heat transmitting qualities of the heater surfaces.

In the event that you want to install a by-pass so that water can be drawn directly from the first range boiler in case the automatic storage heater is taken out of operation, we show detail "A" with two valves.

4—

To the Editor:

I would like to have your advice on the following:

Someone turned off the water in a residence for the winter and then poured fuel oil into all the hot and cold water lines, hot water boiler and steam boiler.

The piping is brass and the storage tank is galvanized.

How can we eliminate the fuel oil in the water lines, etc.?

I would appreciate a prompt reply by return mail, as the new owner wants to occupy the premises.

New York. D. H.

To the Reader:

It would be possible for us to give you more specific information regarding your problem if we knew more

STARTLING • NEW
Revolutionary in design . . . An entirely different
"Standard" Bath will be presented about April 15th
WATCH! — WAIT!

of the details surrounding it. For instance, we do not know what grade of fuel oil was poured into the heating and water supply systems. However, we will outline suggestions which you may follow in removing the oil.

The practice of draining traps of plumbing fixtures and sealing them with kerosene oil as a frost preventive is common enough. We have never heard of anyone doing such a foolish thing as filling the heating and water supply piping in a residence in order to prevent the possibility of a freeze-up. At best, you are likely to have a long job in removing the taste of the oil from the water piping and in removing the effects of the oil from the operation of the heating system.

To start with the heating system, it will be a case of filling it with water to the normal water line and boiling it out. Before doing this, however, disconnect the return mains and waste all of the condensate from the radiators and piping system to the sewer. In this way, you will steam the oil out of the radiators and the piping. This, of course, is the same as the normal procedure in placing a new heating system in operation.

During this cleaning period, naturally the boiler will be boiled out at the same time. You may find it helpful to use a boiler cleaning compound in saponifying the oil so that it will form as a scum on the surface of the water in the boiler. This procedure calls for skimming off the boiler which is done by raising the water line in the boiler to the top blow-off connection. Usually a pipe is run from this connection to a floor drain. The water supply valve for the boiler is cracked just sufficiently to cause the boiler water to over-flow through this skimming connection. This floats the scum, on the top of the water, out through the skimming connection. Naturally, the boiler should be in operation and the water should be hot during all of this process.

When the boiler water runs clear through the top blow-off connection, which is an indication that all of the scum has been skimmed off, the practice is to raise steam pressure in the boiler and quickly blow it out through the bottom blow-off connections. At the same time, the fire is drawn so as to prevent any possibility of cracking the boiler while it is running dry. Obviously, the boiler should be allowed to cool before fresh cold water is introduced.

As you have observed, no doubt, from experience, the cleaning of a boiler is a process which sometimes requires repeated efforts before final success is assured.

As for cleaning your water supply piping, this introduces difficulties which are not encountered with the heating system because there is no means on the job of steaming out the piping. Accordingly, we should suggest that you obtain a portable boiler similar to that which is used for cleaning beer coils or another type which is used by garages and auto laundries in steam cleaning automobiles. Connect it to the water supply piping. We should suggest that you connect it to the upper faucets so that steam and condensate will flow down the water supply piping and carry with it the oil clinging to the sides of the piping.

Another thought is that you might turn the faucets up side down and fit a funnel into the spouts and pour a hot solution of cleaning compound so that it washes out the piping. Repeated efforts along this line should be successful. In fact a combination of steaming and flushing with a cleaning compound might be most satisfactory, the cleaning compound being used to loosen the oil while the steaming is used to force it out.

As has been stated, there is no record of our having encountered a problem such as this where oil has filled the water supply piping. This, together with the fact that we do not know all of the conditions about your job, places all of the foregoing in the class of suggestions.

To the Editor:

We thank you for your answer relative to the difficulty we met on having found fuel oil poured into the steam and water piping on one of our recent jobs.

All we can state about this job is that after a few days the odor of oil and the oil itself just washed itself out through the flow of water.

We did not use any chemicals or other means to rid the system.

We believe however that the question will be of considerable interest to the trade.

New York. D. H.

Questions For READERS

The following question was asked in the February issue, and the following answer is by a reader:

Why is the air vent on a steam radiator located at a distance below the top while on a hot water radiator, it is located at the top?

Fundamentally, the reason for the relative locations of the vents mentioned in your question is due to the difference in weight between air, water and steam.

Steam weighs .037 lb. per cu. ft. at 212 degrees.
Air weighs .059 lb. per cu. ft. at 212 degrees.
Water weighs 60.5 lb. per cu. ft. at 180 degrees.
Air weighs .065 lb. per cu. ft. at 180 degrees.

On a steam heating system, when steam enters the radiator, the radiator is full of air. The air, being heavier than steam, is forced to the far lower end of the radiator. The air vent usually is located about ⅓ the way up from the bottom on radiators with top and lower nipples commonly called "hot water type" steam radiators; and ⅔ the way up from the bottom on radiators with lower nipples only, commonly called "steam type" radiators. The air vent is so located that a maximum of air can be vented before steam gets to and closes the vent.

On a hot water system, when water is admitted to the radiator it fills up from the bottom, thus forcing all air to the top of the radiator (water being heavier than air). The air is forced through the upper nipple ports and is vented at the very top of the end section.

How Would You Answer This Question?

Does a refrigerator cool the room in which it is placed or does it heat it, assuming that both the compressor and the box are together in the same room?

Answers based upon your experience, suitable, will be paid for and published in the June issue.

A Significant FACT

The Scale Free Process was originated by National Tube Company. It has been applied to NATIONAL Pipe and to NATIONAL Pipe alone, for many years. By long research and experiment, NATIONAL engineers brought it to perfection and it represents, therefore, a distinct NATIONAL contribution to pipe manufacture.

NATIONAL Scale Free Pipe looks different—you instinctively prefer it; and the apparent advantage is a real one. Here are the reasons:

1. Minimized corrosion—particularly pitting. Mill-scale is one of the principal causes of pitting; therefore, when scale is removed, longer life is obtained from the pipe.
2. Clean, smooth surfaces, inside and outside—forming a better base for platings, galvanizing, or other protective coatings.
3. Full delivery capacity—less friction loss, because there are no obstructions to the flow.
4. No damage to valve seats; no clogging of small orifices—because there is no scale in the pipe to break off.
5. Greater strength at the weld. The additional rolling this pipe receives in the Scale Free Process increases the strength at the weld approximately 20 per cent, making the pipe particularly desirable for bending and coiling.

When ordering scale free pipe, specify NATIONAL—

The Original Scale Free Pipe

(Butt-weld sizes ½ to 3-inch)

All National Galvanized Pipe is given a special chromate treatment to resist discoloration and the formation of white rust. This patented process preserves that smooth glistening surface or metallic lustre which is characteristic of good galvanizing.

NATIONAL TUBE COMPANY · Pittsburgh, Pa.
Subsidiary of United States Steel Corporation

NATIONAL SCALE FREE PIPE
SPELLERIZED

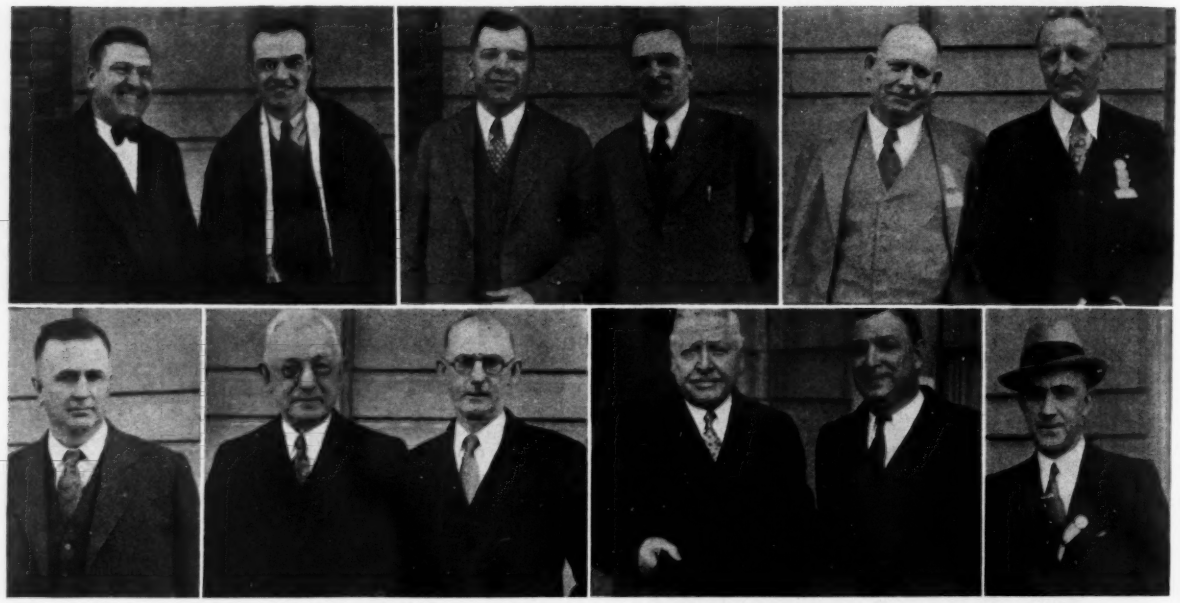


Photo taken at the Iowa State Convention: Top row, left to right: H. M. Labbitt, president, Sioux City Association; W. V. Hagan, Sioux City, state director; J. P. Salz, president, Waterloo association; G. J. Palmer, Ames, re-elected president, Iowa association; George H. White, Fort Dodge and Ray Redington, Waterloo. Bottom row: L. L. Hoffman, Boone; Jacob Schuh, Milwaukee; J. P. McCoy, Fond du Lac, president, Wisconsin association; Fred Kretschmer, Dubuque wholesaler; J. W. Lundon, Dubuque, re-elected state secretary; John J. Calnan, Chicago, vice president of the National Association of Master Plumbers.

Iowa Convention Draws Large Crowd

The Iowa Master Plumbers Association held its convention in Waterloo on March 21 and showed by the large attendance the success met in reorganizing that association. G. J. Palmer, of Ames, who began this reorganization a year ago and who also carried on the work of NRA executive in Iowa for the National Association of Master Plumbers, was unanimously honored for his work and with equal unanimity was re-elected president.

The task of rebuilding Iowa association affairs was carried on not only by Mr. Palmer, but by his associate officers including J. W. Lundon, of Dubuque, secretary, and by the presidents and secretaries of the four zones into which the state is divided. These zones have been holding regular meetings and have thus served as the means of strengthening the state organization.

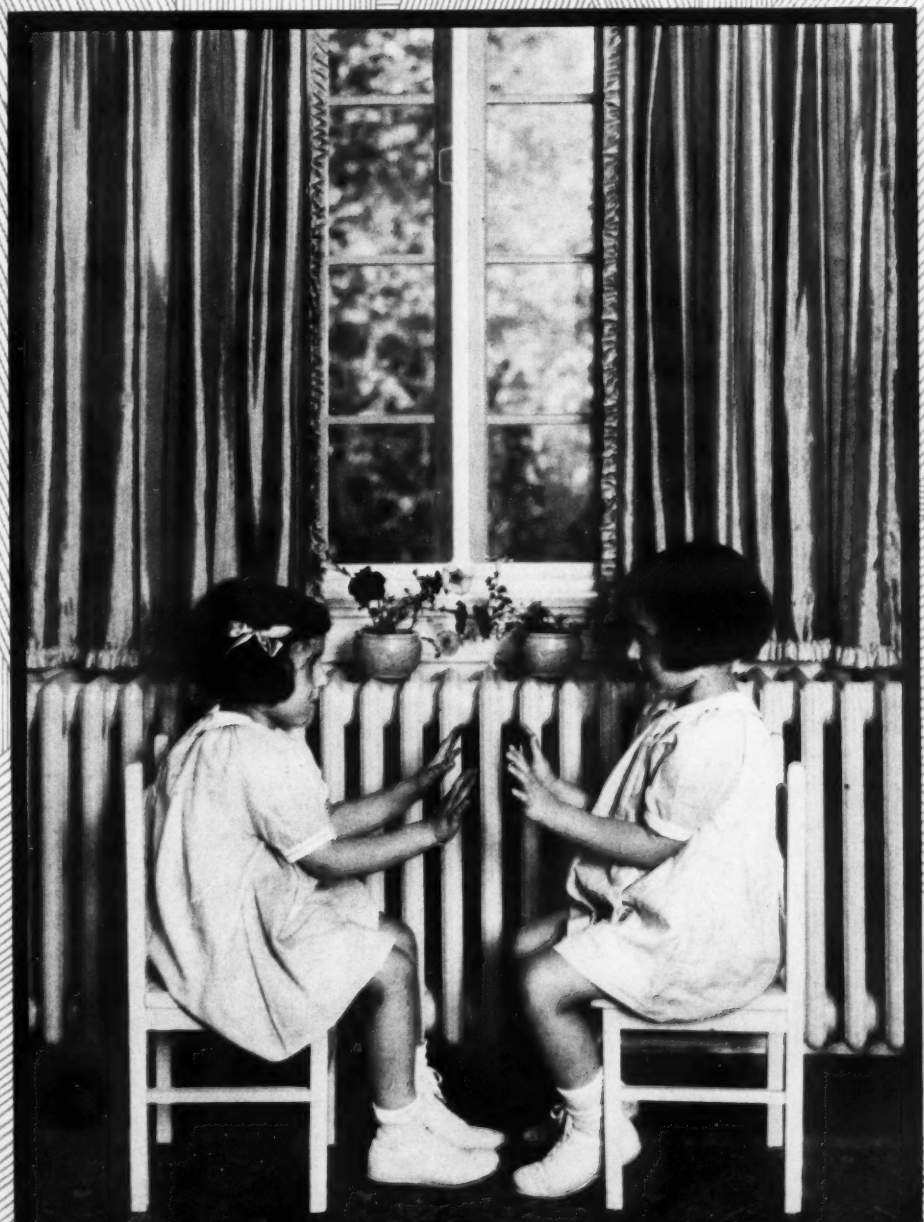
John J. Calnan, vice-president of the National Association of Master Plumbers, E. L. Flentje, assistant to the national president, together with John P. McCoy,

(Continued on Page 157)

The convention of the reorganized Iowa association drew a large attendance

DOMESTIC ENGINEERING

Automatic Heat *and* Air Conditioning Section



OUR INDUSTRY SELLS A FINISHED EFFECT

APRIL, 1934

THESE 5 POINTS MAKE

KEWANEE ROUND STEEL BOILERS

the Best Boilers Built for Oil Heating, yet cost the least

Hot Water Coil Each Kewanee Round "R" has an "in-built" coil for heating domestic hot water—saves the cost of a separate heater.

Draft Adjuster For automatic and accurate draft control, so essential in oil burning.

Spinner Blades Make the hot gases rotate and hug the tube walls so as to transfer more heat to the water.

Two-Pass Tubes Longer travel holds the hot gases in the boiler until their heat is all utilized.

Refractory Lining Insulates the fire and flue doors, prevents heat from radiating outside.

ROUND "R"

for Homes & Smaller Buildings

Heating 540 & 680 square feet of steam, or 860 & 1090 square feet of water radiation.

Here's a regular Boiler . . . backed by 65 years of Steel Boiler Building Experience . . . specially designed and built to provide practically perfect results when teamed up with any good oil burner.

Get the real facts about the Kewanee Round Boiler and its surprisingly low cost.

KEWANEE BOILER CORPORATION

KEWANEE, ILLINOIS — (BRANCHES IN SIXTY-ONE PRINCIPAL CITIES)

6 BOILER FEEDERS IN 1

By adding a switch or an over-flow valve to a Watts No. 60 Feeder, you can obtain SIX different Feeder combinations without changing the piping or disturbing the installation.

This enables you to meet every demand you will ever have for a Single or a Dual Feeder on a domestic installation.

Every vital part can be reached for inspection or cleaning in less than three minutes, without disturbing the operation of the heating system.

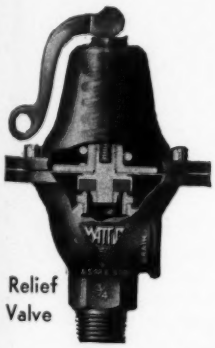
Water cannot get under valve guide or into bellows.

There is little opportunity for transfer of heat to the feed valve or for the retention of heat in the valve, consequently no danger of scale forming.

If there is not sufficient space to install in the regular hook-up, it is easy to swing feeder and goose-neck and use either of two side tappings in float chamber.

The Everdur steam seal bellows is hung in the center and perfectly balanced, so that it is not affected by pressure—no possibility of one part working harder than the other—no danger of stretching bellows beyond the point of elasticity.

Watts Regulator System



Relief Valve

The Watts No. 500 Controlled Hot Water System is the ideal system for oil burner installations and is especially effective on summer and winter hot water systems.

The No. 55 Watts Relief Valve has a safety test lever and a monel diaphragm with over 7 sq. ins. of effective area.

The No. 500 system consists of a No. 55 Safety Relief Valve and strainer, Automatic Feed Valve, Tridicator Gauge, Tank and Circulator.

Watts Circulator

Is designed to give exactly the lift required for hot water jobs. No danger of short circuiting radiators or burning motor.

The balanced pressure impeller assures an even, steady water flow, avoiding water pulsation noises.

The motor is absolutely noiseless.

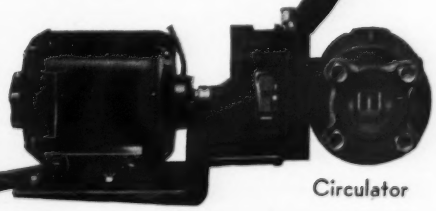
Other important features explained in our catalog. Write for a copy.

WATTS

JOHN G. KELLY, Inc., *Distributors*
210 East 45th St., New York, N. Y.

WATTS REGULATOR CO.
Lawrence, Mass.

Makers of Water and Steam Regulating Devices Since 1874

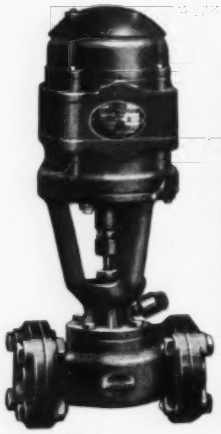


Circulator

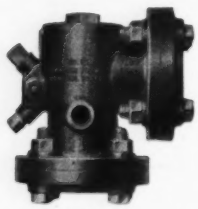
★ THRUSH FLOW CONTROL HOT WATER HEATING SYSTEM ●

★ ESSENTIAL EQUIPMENT

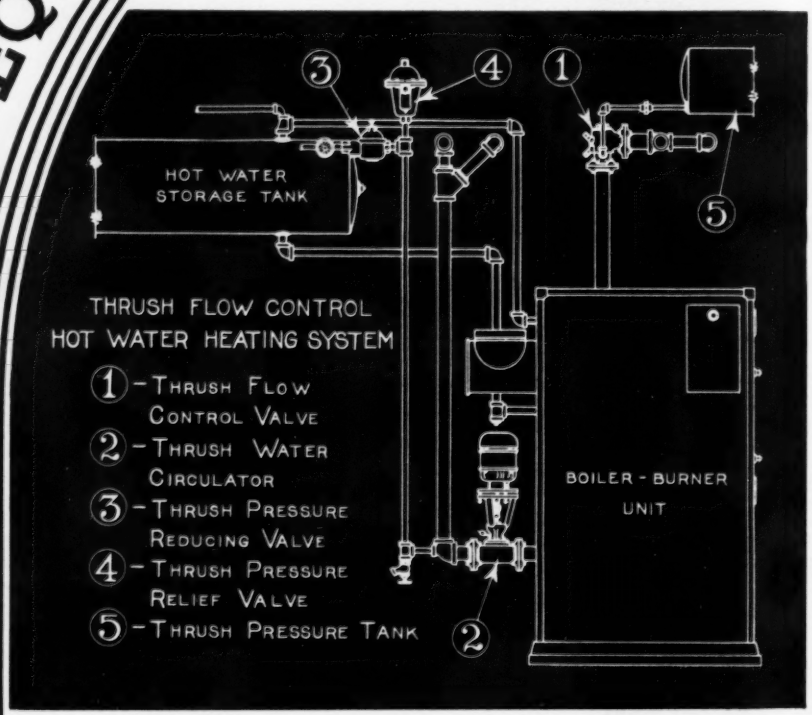
FOR YEAR 'ROUND OPERATION OF THE MODERN BOILER-BURNER UNIT!



Thrush Water Circulator



Thrush Flow Control Valve (Patented)



EVERY Boiler-Burner Unit Hot Water Heating installation intended for year around operation of burner to provide Heat and Domestic Hot Water Supply in winter *and to continue the burner operation for Domestic Hot Water Supply in summer* should have Thrush Flow Control as standard equipment. Operation is fully automatic. The Domestic Hot Water Supply is really hot—and circulation through the Heating System is *automatically* cut off in summer and whenever heat is not needed.

Thrush Flow Control Heating System *completely controls the physical distribution of the heating medium.* It can be installed on old or new jobs easily and inexpensively. It not only cuts down the running time of the burner by avoiding heat losses and preventing needless circulation through the system when heat is not needed—but when heat *is* needed, forced circulating hot water reaches every radiator in every room instantly.

This is the simplest and surest method of control yet developed. *Use the coupon to ask for our new booklet now.*

MAIL THIS COUPON!

H. A. Thrush & Co., Box 459, Peru, Ind.

Please send booklet describing Thrush Flow Control Heating System and its advantages for use with mechanical firing devices.

Name _____

Address _____

City _____ State _____

★ FORCED CIRCULATION ASSURES GREATER EFFICIENCY

H.A.THRUSH & CO.
PERU, INDIANA.

Your Prospects ★ WANT THIS KIND OF AIR CONDITIONING

SO SIMPLIFIED, SO PRACTICAL, SO ECONOMICAL, THAT YOU CAN SELL IT . . PROFITABLY . . NOW

IT'S *good business* to sell Servel Air Conditioning. Because it's good business for your prospects to *buy* Servel Air Conditioning.

For years, merchants, restaurateurs, shop owners and building operators in your local territory have known what Air Conditioning means—in attracting patrons—in making them stay longer and spend more. Industrialists have wanted it—for efficiency of employees—for uniformity of product. Home-owners have dreamed of it—for personal comfort.

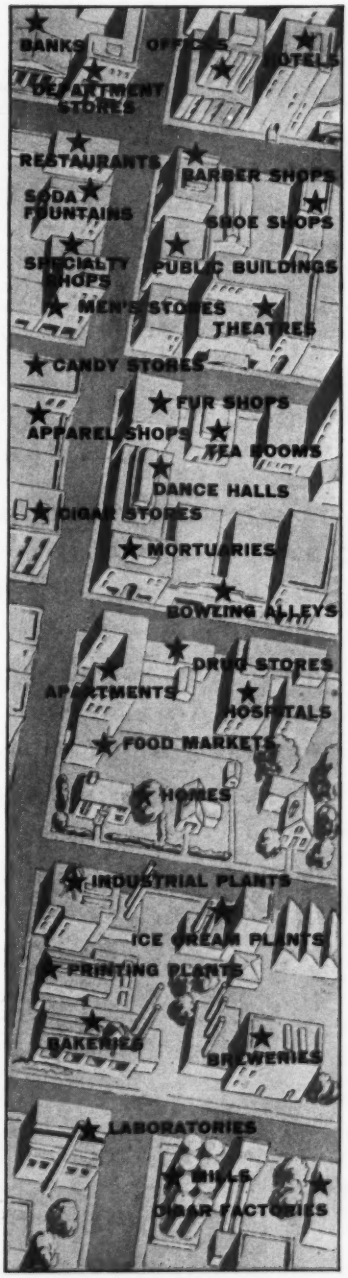
Now, in 1934, you can sell all of them the thing they want—*practical, economical* Servel Air Conditioning. It's simple to install. The cost and operating expense are less than hundreds of waiting buyers expect.

Get the facts about Servel's *advanced equipment for every need*—about Servel's *aggressive sales program*. Distributor and dealer franchises are still available in some centers. Wire or write today for details. Servel Sales, Inc., Evansville, Ind.

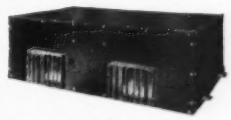
SERVEL

Air Conditioning

AND COMMERCIAL REFRIGERATION

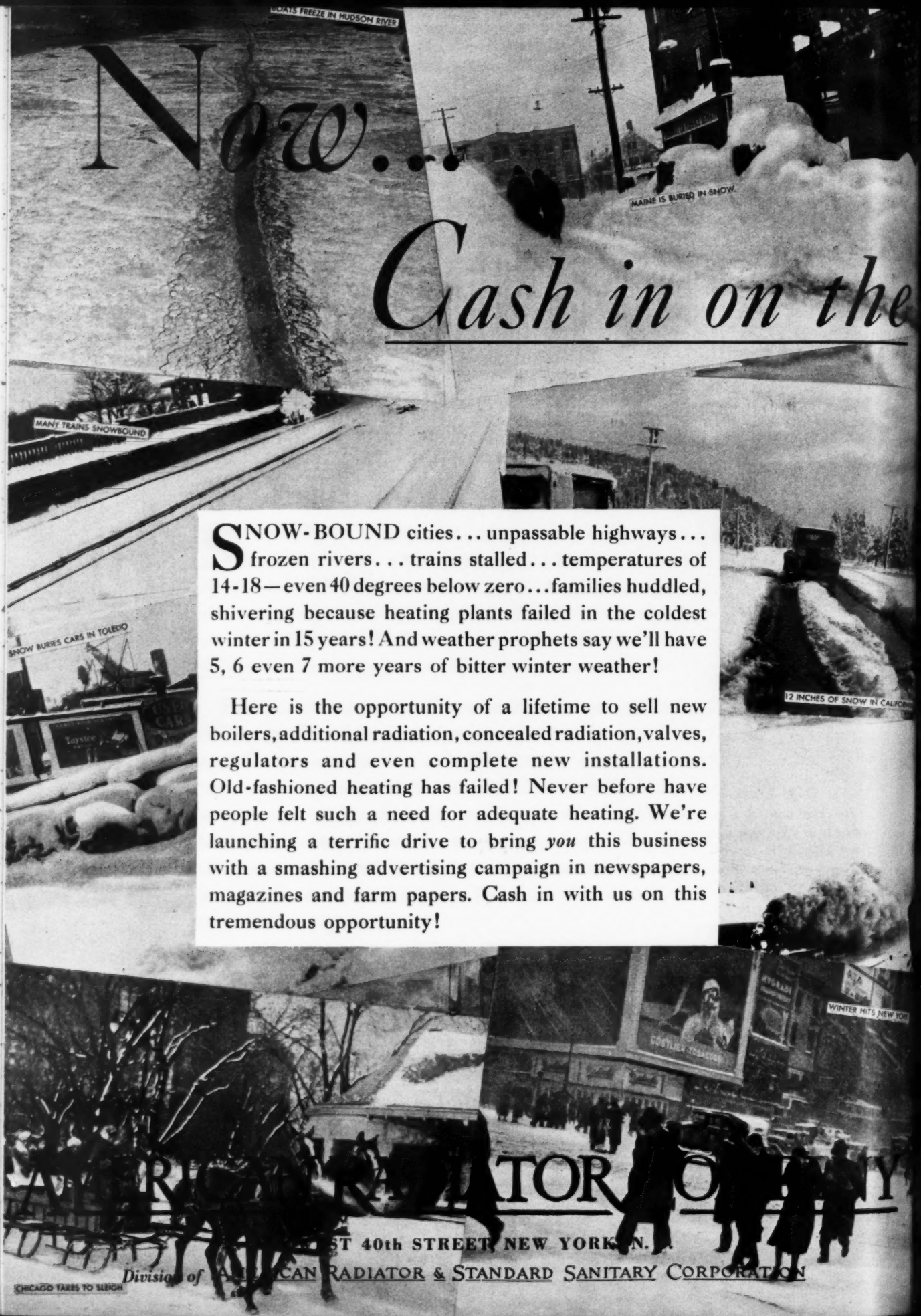


Floor-Type Comfort Unit—cools and dehumidifies in Summer; heats and humidifies in Winter; circulates, filters, ventilates the year 'round.



Suspended-Type Comfort Unit—for all-season, heavy-duty Air Conditioning. To be suspended from the ceiling or connected to wall ducts.

Self-Contained Cooling Unit—a powerful, economical "package job" for Summer use. Can be installed anywhere, simply, easily.


BOATS FREEZE IN HUDSON RIVER
MAINE IS BURIED IN SNOW
MANY TRAINS SNOWBOUND
SNOW BURIES CARS IN TOLEDO
12 INCHES OF SNOW IN CALIFORNIA
WINTER HITS NEW YORK
CHICAGO TAKES TO SLEIGH

Now... Cash in on the

SNOW-BOUND cities... unpassable highways... frozen rivers... trains stalled... temperatures of 14-18—even 40 degrees below zero... families huddled, shivering because heating plants failed in the coldest winter in 15 years! And weather prophets say we'll have 5, 6 even 7 more years of bitter winter weather!

Here is the opportunity of a lifetime to sell new boilers, additional radiation, concealed radiation, valves, regulators and even complete new installations. Old-fashioned heating has failed! Never before have people felt such a need for adequate heating. We're launching a terrific drive to bring *you* this business with a smashing advertising campaign in newspapers, magazines and farm papers. Cash in with us on this tremendous opportunity!

AMERICAN RADIATOR COMPANY

ST 40th STREET NEW YORK N.

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

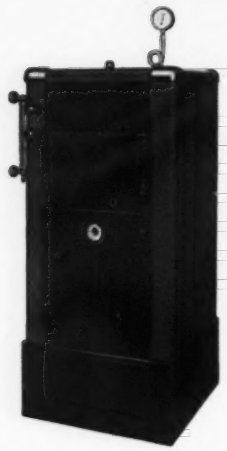
TRAFFIC STOPPED ON BOSTON HIGHWAY
SNOW PLOWS BATTLE TO CLEAR TRACKS
AUTOMOBILES BURIED IN SNOW
WHITE BLANKET COVERS WHITE HOUSE
"THERE ARE TOO MANY COLD ZONES IN OUR HOUSE"
It's always warm and Cozy.....
WITH AMERICAN RADIATOR HEATING
Ads in Farm Papers with a total circulation of 2,148,150 copies
Cold Zone can spoil even the warmest of Hospitality
Ads like this will appear in newspapers with a total circulation of 9,925,429 copies
AMERICAN RADIATOR COMPANY
Ads in Magazines will reach a total circulation of 4,295,446 copies
AMERICAN RADIATOR COMPANY
SEVERE STORM BURIES CARS
"IDEAL" MAGAZINE BOILER
"IDEAL" OIL BURNING BOILER
IDEAL" REDFLASH BOILER
ARCOLA RADIATOR HEATING

...e coldest winter in 15 years

...through this *Powerful Advertising*

...with these *Popular Products*...

"ROYAL" *Leads Again*



WITH A FULLY TESTED WELL BALANCED OIL BURNING HEATING UNIT OF PROVED DESIGN

Gun type or rotary oil burners operate equally well in the new, modern ROYAL Oil Burning Boiler. The ROYAL absorbs more heat because of its balanced design and greater amount of heat transmitting surface, gained through the use of wrought iron tubes, which cannot corrode or burn out, built into the back section of the boiler, projecting into the hottest part of the oil fire where they pick up a greater amount of heat. This construction was selected because of the long life of wrought iron tubes indicated, over a long period, by similar design in our regular boiler line.

As a result, the ROYAL is a very fast "steamer," highly sensitive to boiler controls. A more constant flow of heat and a greater effectiveness in burning oil is maintained because control is kept on an even basis.

The ROYAL Oil Burning Boiler rounds out the complete line of jacketed ROYAL boilers now built in sizes and capacities to meet a wide range of requirements. The regular coal burning patterns, illustrated below, are made in three grate widths, rated conservatively and known to the trade as unusually successful in performance and economical in the use of fuel. Oriole radiation, made in our own plant, is attractive in design and can be included with boiler shipments.

Your inquiry will bring you prices and catalog material describing the complete line.

Actual performance tests check accurately with experience of owners of ROYAL Oil Burning Boilers who thoroughly endorse the tube principle design. Greater fuel economy, full use of the heat generated, omission of freak construction, extra heating surface, even flow of heat, super-sensitive temperature control, durable cast-iron sections and proper balance found practical through long manufacturing experience—these and more—are available only in the ROYAL line.

The DeLuxe ROYAL Oil Burning Boiler

is furnished in beautiful art metal green jacket with attractive metal trim.

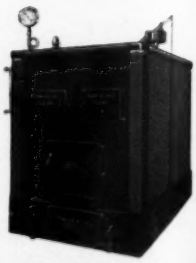
Hart & Crouse Co., Inc., (and its predecessors) have enjoyed the loyalty of the trade for more than 112 years. A strict policy respects the principle that heating contractors are best qualified to install heating equipment because they have fitted themselves for the proper performance of this exacting work and, therefore, are entitled to a reasonable profit for their investment and labor.

No. 1 RED GLO

REGULAR JACKETED LINE MADE IN THREE GRATE WIDTHS

No. 2 RED GLO

BUILT IN SIZES THAT WILL MEET NEARLY ALL NEEDS



No. 3 RED GLO

HART & CROUSE CO. INC.

301 TURNER STREET UTICA, NEW YORK

The Burnham-Taco Tank

LIVES A DOUBLE LIFE

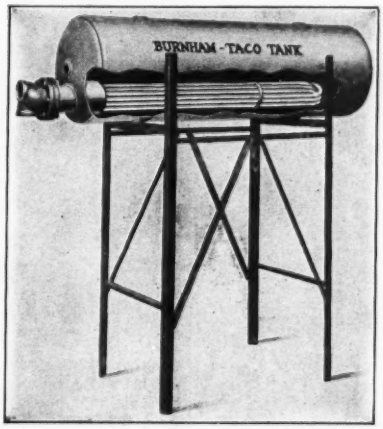
All galvanized shells of Burnham-Taco Tanks are now made of COPPER BEARING STEEL. Doubles the life of the tank. Also furnished in both copper and Everdur.

Tested to 300 lbs.

Fifty more pounds have been added to the pressure test each tank must stand. Used to be 250. Now 300 lbs.

Oversize Coil

In every Burnham Taco Tank the copper coil is oversize. You know exactly what that means in quicker heating of the water. A special advantage with oil heating outfits.



No extra cost for stand. Furnished free with each tank up to and including 100 gallon. Cut down legs to fit job. Coil removable.

Standardized Sizes

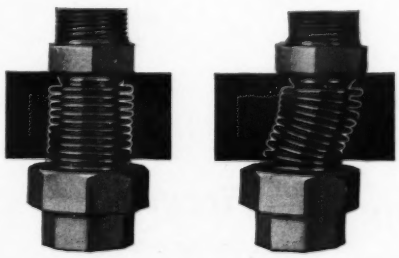
In accordance with the Heat Exchange Institute's standardized sizes, all Burnham-Taco Tanks are now made for following gallonage: 40-66-82-100-120-140-180.

Backing for Dealers

As with other Burnham specialties, we furnish all dealers with circulars imprinted with their own name. Stocks of tanks are carried in all our branches, meaning quick deliveries. Dealers have full advantage of our engineers, in addition to those of the Taco organization. Send for printed matter. Get prices.

FLEXIBLE HEADER— *A Time and Money Saver*

If tappings are out of line the least bit you know what a heck of a job it is to start the threads. With the Burnham Flexible Header the bellows bend to meet it. Cuts down profanity. Cuts down time. Saves you money. Sold mounted on header. Send for full particulars.



Price of Header depends on the length, plus the number of Burnham Flexible Connections furnished. For example, a 25-inch Header sells at $2. If say four connections are required, you add the cost of 3 Flexible Connections at $1.50 each, and one Union at 30 cents. That makes a total of $6.80 for Header complete ready for connecting directly to the boiler.

Burnham Boiler Corporation

IRVINGTON, NEW YORK

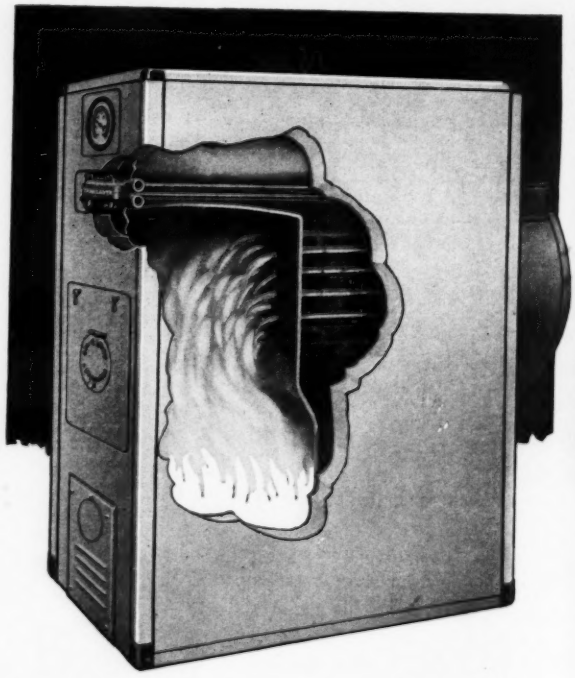
Representatives in all Principal Cities of the United States and Canada

They said it couldn't be done

• • • A wooden building, set on piers on a river bank, *exposed on all four sides and top and bottom* to the bitter winds and low temperatures of a Maine winter . . . they said it couldn't be heated efficiently . . .

but the FITZGIBBONS OIL-EIGHTY AUTOMATIC did it -- and saved money

This American Legion Home in Augusta, Maine, is a steam heating job of 1500 sq. ft. radiation. The enterprising heating contractors, Turner & Hussey, Inc., of Augusta, Maine, pinned their faith on the OIL-EIGHTY AUTOMATIC, installed one, and demonstrated that only $155 was needed of the $250 appropriation for the season's fuel oil.



The OIL-EIGHTY AUTOMATIC is a steel boiler that goes all the way to enable any good oil burner to do a real heating job. In every characteristic, in every dimension, it is designed to take all the heat liberated by the burner and put it to work. Combustion area is *right*—heat transfer is exceptionally rapid. And, in addition, for domestic use, this boiler can give, summer and winter, the valuable service of

INSTANT HOT WATER
without a storage tank

WRITE FOR BULLETIN D

and get full details of this perfect team-mate for any good oil burner.

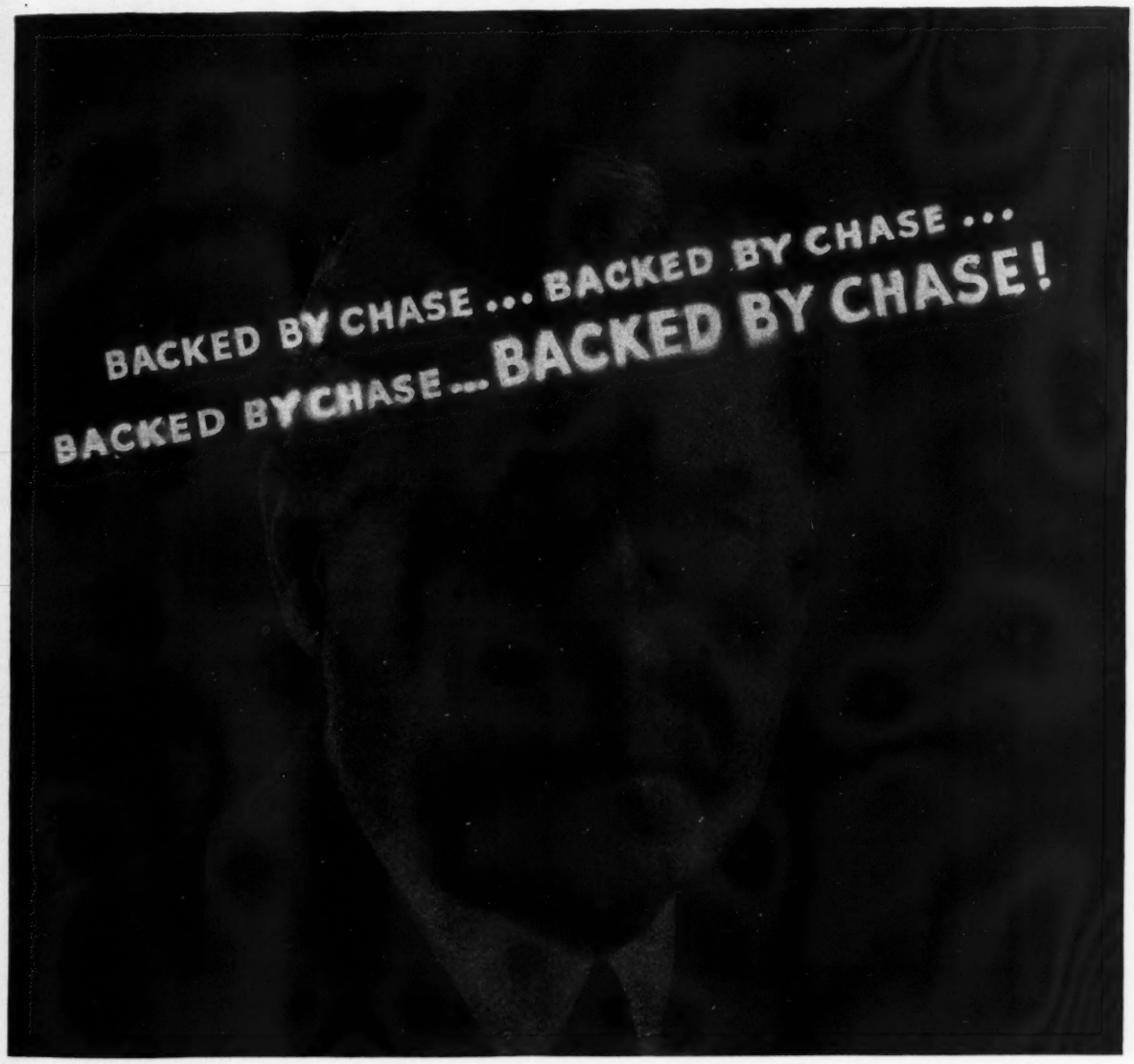
NRA MEMBER WE DO OUR PART

Fitzgibbons Boiler Company, Inc.

GENERAL OFFICES: 570 SEVENTH AVE., NEW YORK, N. Y.
Works: OSWEGO, N. Y.

BRANCHES AND REPRESENTATIVES IN PRINCIPAL CITIES

Fitzgibbons
OIL-EIGHTY AUTOMATIC



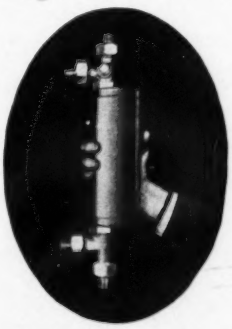
As a closing sales argument for copper water heaters or radiators we recommend the words "Backed by Chase!" Plant that thought firmly in your customer's mind and you add weight to all of your selling and mechanical features. He knows then that he's been listening to *facts* . . . facts backed by an experienced organization of national reputation.

It will help your sales and help your business to push products that carry the Chase trademark.

NRA

CHASE-ERSKINE
ALL-COPPER WATER HEATER

Shell and coil of smooth copper. Never needs cleaning out—can't rust. Costs but a trifle more than ordinary cast iron shell type. Send for a copy of the new free catalog.



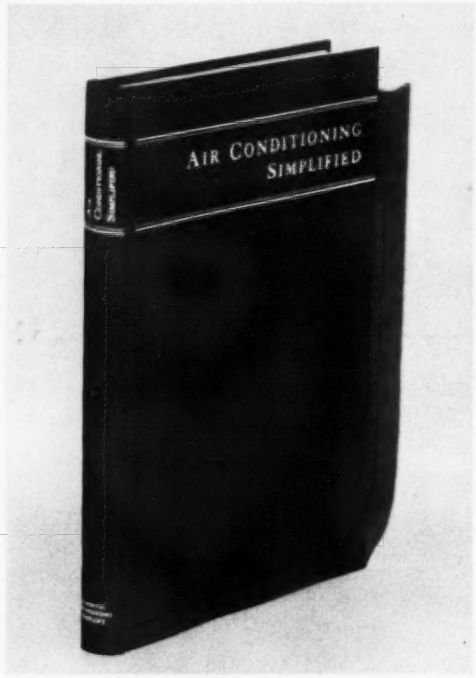
CHASE ERSKINE RADIATOR

CHASE BRASS & COPPER CO.
—INCORPORATED—

Heating Products Division

WATERBURY, CONN.

AIR CONDITIONING SIMPLIFIED



★

A brand new book containing information every man should know about air conditioning.

★

AIR CONDITIONING SIMPLIFIED, as its name implies, is a simple, easily understood book that takes the mystery out of air conditioning—it tells what it is—how it works—how it is installed—and how it is sold!

This new book, off the press April 10th, has back of it three years of planning and preparation. It is divided into three main parts.

The first part, covering the theory of air conditioning, gives a simple but thorough explanation of the mechanical end of an air conditioning system. It contains facts from the pens of the best authorities in the country—men like Samuel R. Lewis, Walter L. Fleisher, A. M. Daniels and over fifteen others. It has all been compiled and edited by the well known heating authority, Harold A. Alt.

Part two describes in detail a number of actual installations, including floor plans, working drawings, detailed drawings of equipment, etc. There is no theory here—just plain examples of what has been done, the cost, etc.

The answer to the question "Can Air Conditioning Be Sold?" is well illustrated in the third part. Here you see just how air conditioning is being sold. Other contractors are selling it and here you will find out how they go about it.

We recommend this book with the utmost confidence that it will give you an entirely new slant on air conditioning. Go through its pages. Find out for yourself why we recommend it as the best book to meet the needs of the air conditioning industry of today.

The book, for the time being, is priced exceptionally low at $1.00. This $1.00 is based on "depression" priced printing, paper and binding. But now "depression" is over. Paper, printing, engraving and binding have skyrocketed, sending costs high in the air. When the first edition is exhausted the price of $1.00 will undoubtedly have to be raised.

So fill in the coupon below. Pin your check for $1.00 to it and mail it today. Money back if you are not completely satisfied.

CAN YOU ANSWER THESE QUESTIONS?

In figuring cooling, how much radiant energy from the summer is absorbed by window glass?
To what extent will awnings reduce the cooling load for a home?
How can the cost of cooling be figured on the degree-day basis?
How can a home be dehumidified and cooled using gas heat?
How much does it cost to air condition a home in both summer and winter?
How should you go about cooling a residence using ice?
Do you know how to design ducts for air conditioning?
How can Noise be eliminated?
What is steam jet refrigeration for air conditioning?

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Selling Air Conditioning and How It Is Done.
Selecting and Teaching Sales Prospects About Air Conditioning.

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IF! It will do this *IF* you start right now to establish yourself, both in experience and in reputation, as *"Air-Conditioning Headquarters for your Community,"* and if you convince your customers and your prospects that air-conditioning is a winter-summer operation.

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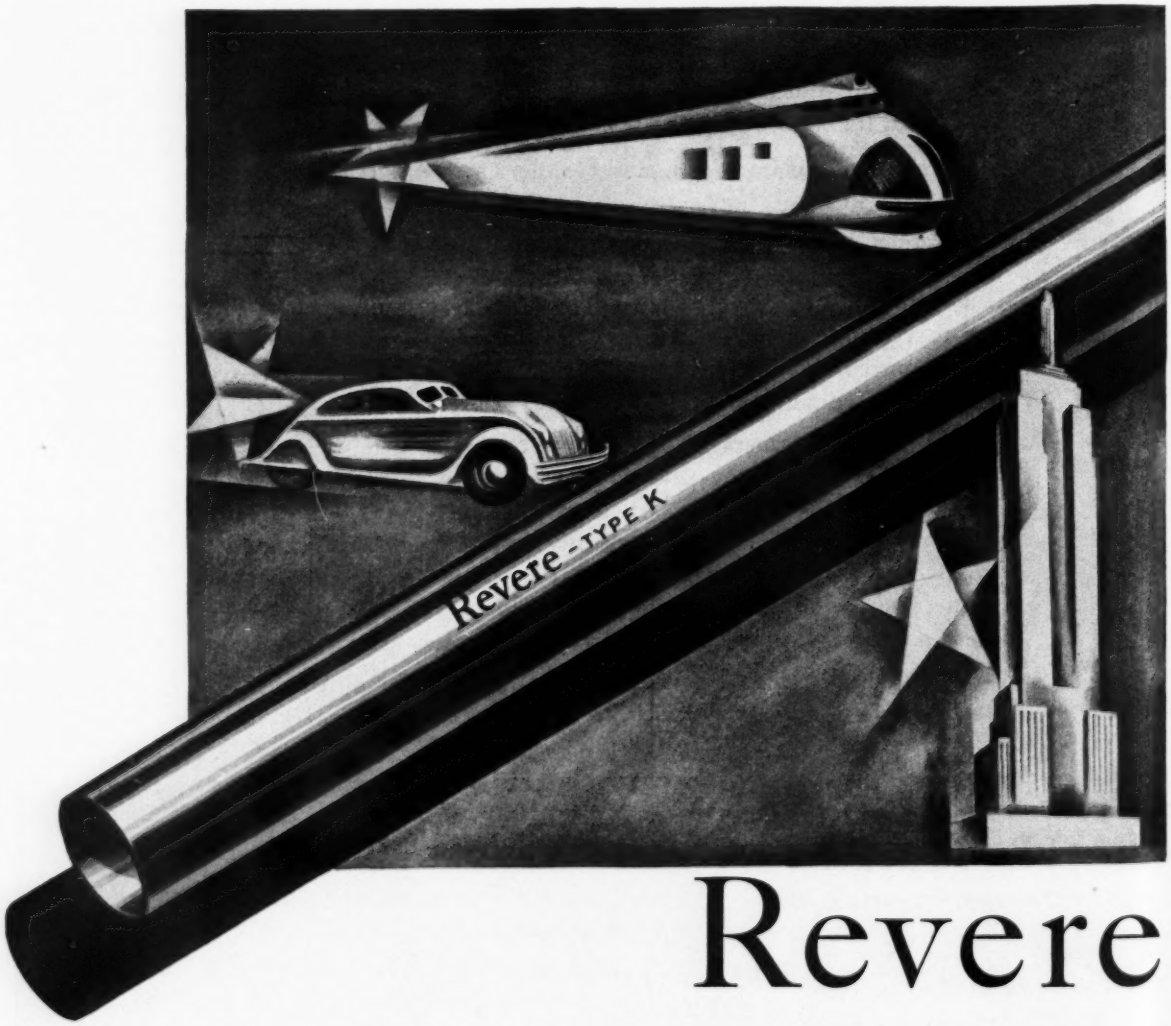
● *The world has accepted modernism in architecture, automobiles, railway trains, furniture . . . in fact, nearly every phase of civilization is changing to* streamline.

● *Revere Copper and Brass Incorporated, the oldest U. S. rollers of copper, now offer the latest improvements in piping: Copper Water Tube (P R Pipe) and Streamline Fittings.*



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(P R Pipe) Revere now offers a complete service

EVEN a problem as old as joining two pieces of pipe has been subject to changed methods. For example, the invention and development of Streamline Soldered Fittings bid fair to revolutionize methods of pipe joining and to open new fields for non-ferrous piping.

To serve the plumbing, heating trades and industrial users, the country-wide service facilities of Revere Copper and Brass Incorporated are now made available for the distribution of Streamline Fittings.

The combination of Revere Copper Water Tube (P R Pipe), an original contribution of Revere, and Streamline Fittings made by Streamline Pipe and Fittings Co., offers many definite, positive advantages for practically every type of piping installation.

The copper that is used in making Revere Copper Water Tube is 99.9% pure. It is completely deoxidized, free from flaws and imperfections, and by a special manufacturing process it is given a gun-barrel finish inside. This special finish aids the easy *flow* of water. Revere Copper Water Tube is furnished in three standard weights (Government Types K, L, and M), and in a range of sizes to meet all usual requirements. Rust-proof, trouble-free . . . Revere Copper Tubes are practical assurance of lifetime service.

The Streamline Fitting assures an absolutely tight connection. *It is a fitting made for the experienced plumber or steam-fitter, and requires a mechanic's skill and tools to connect.*

The fitting is a radical departure from previously accepted methods in that it is soldered. The soldering operation is performed by feeding wire or stick solder through a feed hole in the fitting after the Revere Copper Water Tube has been assembled in it, and sufficient heat applied with the blow torch. Through the phenomenon of capillary attraction, which is increased by the close tolerances of the precision-made fitting, the solder distributes itself outward and inward over the entire area between pipe and fitting. A continuous bright ring of solder appears at the end of the fitting. The Streamline is the only fitting on the market which has this visual inspection feature . . . an assurance of a perfect, leak-proof connection.

Thus, Revere Copper Water Tube (P R Pipe), which induces *easy flow* of liquids joined by Streamline Fittings *especially designed to aid flow*, offers a piping set-up unequalled on the market today.

Ask your regular Revere distributor about Revere Copper Water Tube and Streamline Fittings. Or write direct to Revere Copper and Brass Incorporated. Executive Offices, 230 Park Avenue, New York City.

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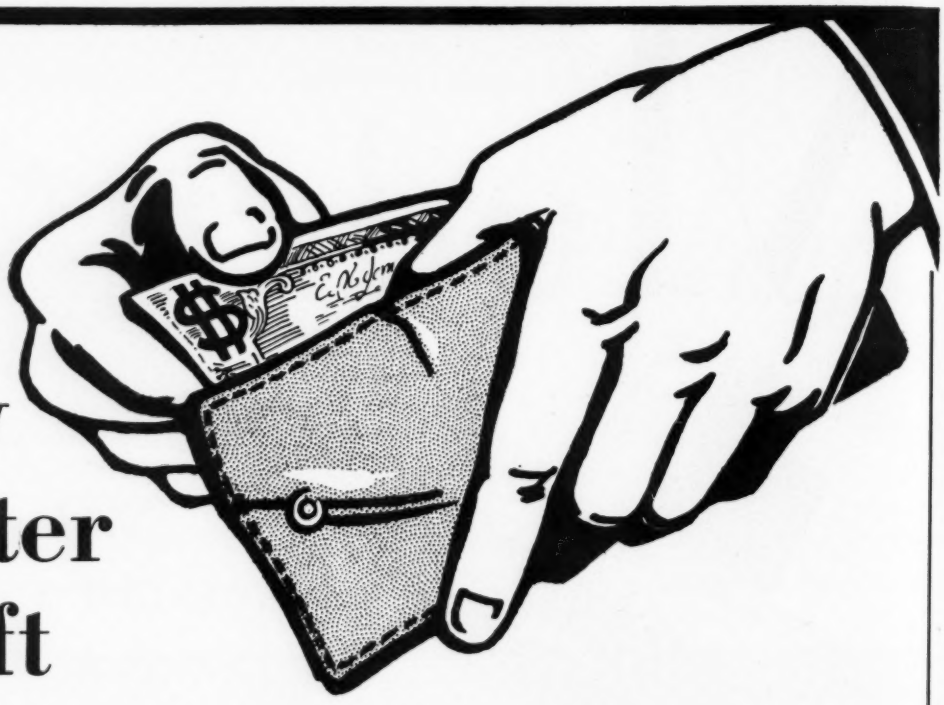

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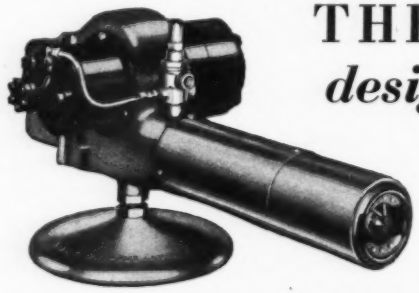

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A Master stroke of Master Kraft Engineering. Retains every feature of Master Kraft efficiency. Famous Master Kraft combustion head. Famous Master Kraft PETROLAIR Mixture. Famous full-fitting multi-tongue flame. Beautiful enamel finish. Compact design. Fully automatic. Fully tested. Fully guaranteed.

This new THRIFT Model, completes a line of 5 high efficiency Master Kraft burners—labor-saving, money-saving units, custom-tailored to every type of installation and a range of prices that appeal to every type of pocket-book.

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Master Kraft
Thrift Model OIL BURNER

April, 1934

Two Trump Cards

Two lines of analysis usually develop now when manufacturers, engineers and dealers interested in automatic heat and air conditioning get together. The recent oil burner convention at Philadelphia served both to uncover the two different viewpoints and also to furnish some evidence of which side is right.

The discussions arise from the definite interest which has been stirred up during the past year or two in the subject of air conditioning. Whether that newly aroused public interest is a good or bad thing forms the basis of the arguments.

The one viewpoint is that the public has already been oversold, without gaining at the same time enough knowledge of the costs of obtaining and operating a complete home plant. From this standpoint, the slack construction of so many American homes is an item of more importance in connection with summer cooling than it has been with winter heating.

The opposing viewpoint is that the publicity on air conditioning has stirred a new appreciation by home owners of the fact that many of their mechanical and domestic services are not satisfactory. The old equipment which a year or two ago was good enough is now being more widely recognized as inefficient and uneconomical.

The oil burner show revealed the soundness of the latter viewpoint. The record breaking attendance showed its interest in air conditioning and automatic heat. A public, aware that something a great deal better was ready for use in the home, was out to learn more about these conveniences and to get them if possible. Automatic heat and air conditioning are trump cards. With them the dealer holds a winning hand.

Insulation for the Modern Home

Fig. 1—The illustration at the left shows the application of insulating material to an already constructed and occupied home

There is a growing trend toward the general recognition that adequate building construction is the first goal in air conditioning. Here, insulation is of prime importance

THICKNESS of Insulation. The effect of thickness of insulation is obvious when insulations having the same conductivity are considered. It is not so obvious when the insulations have different conductivities. Assume that a frame wall consisting of 5/8-in. clapboards, 25/32-in. sheathing, 3 5/8-in. studding, wood lath and plaster, is to be insulated in one case by the addition

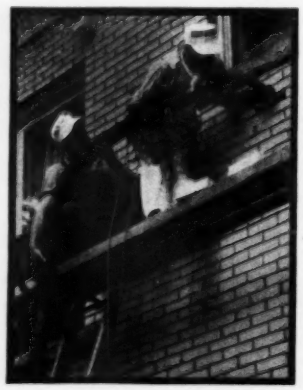


Fig. 2—Here, workmen are shown with equipment for blowing a fill type insulation into a brick type of wall

½-in. of insulating board having a conductivity of 0.30, and in the other by filling the studding space with a material having conductivity of 0.40. If these materials were to be judged by conductivity alone, the fill material would transmit 1.33 times the heat that the board would. However, a calculation of the overall heat transmission gives a value of U, for the wall insulated with the board =0.182, and U_2 for the filled wall =0.082, thus proving that the wall insulated with the fill would transmit only 0.45 of the heat transmitted by the wall insulated with the board. In this case the relative values of the conductives had practically no significance in determining the relative values of the walls. The term U represents the overall heat coefficient and is the Btu. per sq. ft. per hr. per deg. Fahr. difference in temperature from air to air.

Incidentally, the value of U for the original insulated wall would be 0.262. If the ½ in. of insulating board were merely substituted for the sheathing, this value of U would be decreased to 0.238.

Structure of Walls. A rather common misconception arises from the assumption that the same thickness of a

By A. P. KRATZ
Research Professor in Mechanical Engineering,
University of Illinois

Excerpts from paper read before Midwest Bituminous Fuels Conference, Purdue University

given insulation is equally effective in all types of walls. That such an assumption is unwarranted is evident from the following example. Assume three walls, namely (1) a thin sheet metal wall, (2) an unplastered concrete wall 8 in. thick, (3) a brick veneered frame wall consisting of 4 in. of brick, 25/32 in. of sheathing, 3⅝ in. of studding, wood lath and plaster. Each wall is to be exposed to still air on the inside and to a wind velocity of 15 mi. per hr. on the outside. The overall coefficients of heat transmission for the uninsulated walls are $U_1 = 1.0$, $U_2 = 0.622$, and $U_3 = 0.203$ respectively.

If each of these walls is now insulated with one inch of material having a conductivity of 0.32, the new overall coefficients of heat transmission become $U_1 = 0.243$, $U_2 = 0.200$, and $U_3 = 0.125$. By forming the ratios of the heat transmission coefficients it may now be noted that the insulated sheet metal wall transmits 0.24 of the heat transmitted by the uninsulated sheet metal wall, the insulated concrete wall 0.35 of the heat transmitted by the uninsulated concrete wall, and the insulated brick veneered wall 0.62 of that transmitted by the uninsulated brick veneered wall. Thus, it is evident that the effectiveness of a given thickness of insulation depends on the nature of the original wall, and that, in general, a given amount of insulation is relatively more effective in reducing heat loss through a poorly constructed wall than it is in the case of a well constructed wall.

Insulation of Ceilings. From the equation $H = UA(t_1 - t_2)$ it may be seen that the heat loss through a given area is dependent on both the overall coefficient of heat transmission and the temperature range of the air on the two sides. Here H equals heat transmission in Btu. per hour; A equals the wall area in sq. ft.; t_1 equals temp. of indoor air, deg. Fahr.; and t_2 equals temp. of outdoor air, deg. Fahr. In the cases of the walls which have been discussed, the addition of the insulation would not change the air temperature on either side, and hence would not affect the temperature range. Therefore, the fraction of heat saved by the insulation would be numerically equal to the ratio of the overall heat transmission coefficients for the insulated and the uninsulated walls.

In the case of ceilings, however, where the air above the ceiling is enclosed in an attic space protected by a roof, any change in the rate of heat transmission through the ceiling would be reflected in a change in the temperature of the air in the attic.

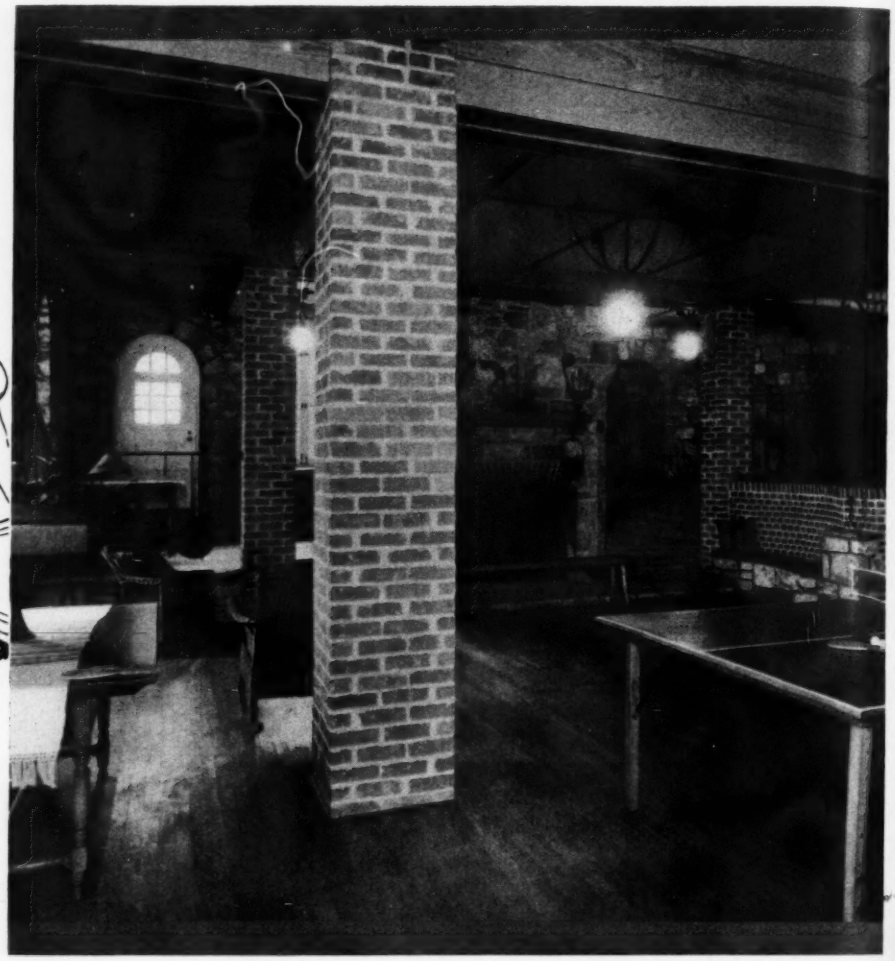
A CASE AS ILLUSTRATED

This may be illustrated by assuming a wood lath and plaster ceiling with an unfloored attic. The overall heat transmission coefficients will be $U_1 = 0.502$. If this ceiling is now insulated by placing 2 in. of a material having a conductivity of 0.275 on top of the laths, the coefficient will become $U_2 = 0.110$. Judged by the ratio of coefficients alone the insulated ceiling would transmit only 0.22 of the heat transmitted by the uninsulated ceiling.

However, on a day when the outdoor temperature is zero deg. Fahr., with the uninsulated ceiling, the temperature in the attic will be approximately 40 deg. Fahr. and the temperature of the air below the ceiling 73 deg. Fahr. With the insulated ceiling, the attic temperature will be reduced by approximately 15 deg. Fahr. and the temperature of the air below the ceiling increased to 76 deg. Fahr. Hence the amount of heat transmitted through the insulated ceiling would be $0.22 \times \frac{76 - 15}{73 - 40} = 0.41$ of that transmitted through the uninsulated ceiling, instead of the 0.22 given by the ratio of the overall heat transmission coefficients. In some combinations of ceil-

(Continued on Page 102)

Fig. 3—Another job of installing insulation in an existing home is shown in the illustration at the right



Our Industry Sells a Finished Effect

*Our Sales and Engineering Go Hand in Hand, says Dayle G. Malone, author, at oil burner convention**

RESIDENCES and the two and three-family flats usually present a greater problem in this industry because, in these, the whole responsibility of sales and installation is generally placed on the shoulders of the dealer, whereas the larger jobs are either installed according to specifications of the architect or in close cooperation with an engineer. Therefore, I have in mind in making the suggestions and statements to follow, a plain, every-day domestic sales problem.

The mutiplicity of types and sizes of boilers and radiators manufactured in the past, as well as the ever-changing designs of modern-day equipment, constantly presents an engineering and reference problem to the dealer or salesman calling on customers in search of oil

*Paper presented at the 11th National Oil Burner Show and Convention, Philadelphia, 1934.

burner business. He may run up against the old circular radiator or the modern indirect copper design, or he may be confronted with a lot of questions such as—

"Is my boiler oversized or undersized?" "Why do I burn so much coal?" "Why doesn't my bedroom get as warm as my living room?" "Will an oil burner produce a smudge on my walls?" "How much oil will I burn per season?" "Is oil cheaper than gas or coal?" "How can I get more humidity in my rooms?" "What makes my boiler smoke?" "Why do my pipes pound?" "Should the pipes in my basement be covered?" "How often should I put water in my boiler?"

Combine this with the increasing demand on the part of a purchaser for more efficiency and the fact that a brother-in-law fires a boiler in a large building, calling himself an engineer, and you can imagine what a comfortable feeling it is for a man, confronted with these questions and conditions, to have an engineering background that enables him to answer the problems that present themselves clearly and accurately. I believe that answering questions of this nature accurately and clearly builds confidence, which to my mind, coupled together with a likeable personality, are the greatest aids to securing business.

Let me make it clear that I think sales presentations are most valuable, but without something to back them up, such as an engineering background, the sales presentation loses a great deal of its force. If the salesman or dealer cannot answer anything but what is contained in the sales presentation, he loses some of the confidence that the dealer or salesman gains by being able to answer and explain a variety of questions that are so often asked.

Some dealers are provided with a sales presentation that has built into it an engineering slant, that covers in its natural course many of the peculiar questions inherent with the average customer. In every case, the sales slant of a sales presentation is carried out with unusual care. Great concern is given the advantages and the features of the particular type of oil burner dealt with. There are innumerable treatises available, giving different points and steps toward making a sale. There are unique ways of approach and close given. There are clever suggestions as to canvassing and sources of securing prospects.

Therefore, if we can add to these many and most valuable suggestions, offered either through recommended sales presentations or by recognized sales authorities, an engineering touch—my own experience, following eleven years of its application—leads me to believe it will be of some definite advantage. I am firmly convinced that a method of using all engineering applications toward securing a sale will secure less business than a method using all sales applications. Nevertheless, I am just as firmly convinced that a combination of the two will secure more business than the straight use of one or the other.

I do not want to suggest or intimate to any degree that a dealer or salesman use technical terms, so that he is continuously talking over the customer's head, but, there is a time during every sales presentation when an engineering knowledge can be used successfully to lay a background, or what might be known as a build-up, to where the sales application can pick it up and carry on. This is a foundation that will build confidence and will keep it alive during the course of the presentation by an-

(Continued on Page 90)

These illustrations indicate how automatic heat makes recreation rooms possible. The owner is interested in the finished effect

Fig. 1—"This dealer appreciates the tremendous pulling power of good photographs. Those shown here on these pages are among his effective collection"

By R. C. Nason

Time to Sell

THAT the time is ripe for selling air conditioning in commercial and mercantile establishments of many kinds is the open assertion of Arthur G. Smucker, New York, for many years a prominent ventilating, conditioning and cooling contractor. It is these classes of prospects, states Mr. Smucker, that one can offer winning selling arguments based on promised financial returns. Hence, under present conditions the contractor has every chance of success in approaching building owners and business heads on air conditioning.

As is rather generally appreciated in the heating industry theaters were among the first to purchase comfort cooling and its apparatus. Why? Purely because, reminds this New York contractor, customer comfort prevented summer attendance slumps and actually trebled hot weather patronage in innumerable instances. This situation is but a single example of the hard-headed viewpoint of those responsible for net profits in business enterprise. Many others, such as stores, barber shops, banks and whatnot might be cited.

Among the "susceptible" prospect class, if one can so refer to possible purchasers, are restaurants. When these are located beneath street level the chances of the contractor's selling success are enhanced from the fact that such places practically must have artificial comfort machinery. One job leads to another.

Arthur Smucker knows selling from many years experience, knows the art well enough, in fact to appreciate the tremendous

Fig. 2—The illustration at the right shows a restaurant in which Mr. Smucker sold and fitted out one of his air conditioning installations

"Customers who formerly ordered cereals and salads in hot weather now order steaks and hot coffee when the mercury hits 90, and enjoy them. Luncheon checks increased from an average of 50 cents to 90 cents." This was attributed to the effect of air conditioning and is typical of most restaurant owners' experiences, along this line

pulling power of good photographs. Those here shown are among his effective collection and have aided him in clinching orders in a dozen or more similar restaurants.

The entire story involved in this installation may be taken as typical. The restaurant is in the financial and insurance district and until two years ago was crowded summer and winter. The owner had mechanical ventilation but no cooling nor dehumidification.

Business conditions among his large clientele — the total seating capacity is over 250 — caused tremendous falling off in trade. Many patrons no longer frequented the section while others sought cheaper establishments. In short, the owner, must do something to fill up his vacant luncheon chairs. He did the right thing; he remembered the selling visit of Mr. Smucker somewhat previously and asked for an estimate on cooling. The bid was $10,000. It seemed tremendous but since installing air conditioning the investment has earned its cost and brought profit.

Customers who used to order cereals and salads in hot weather now order steaks and hot coffee when the mercury hits 90 and enjoy them. Luncheon checks increased from an average of 50 cents, so stated the proprietor, to 90 cents, attributed to the improved atmosphere.

As this layout is largely recirculating, operation cost is nominal. The two large grilles observed at the rear of the dining room are exhaust outlets and feed two large cased fans mounted on platforms. One fan handles 6,600 cu. ft. min. and the other 5,000 cu. ft. min. The

Air Conditioning

larger fan drives its air through 10 expansion coils of a single compressor-type refrigerating unit, while the smaller fan requires 8 coils. Thus, the air supplied to the dining room cools this room from 5 to 15 degrees lower than outdoor air. Dehumidification is regarded definitely as a factor in effecting the desired comfort cooling.

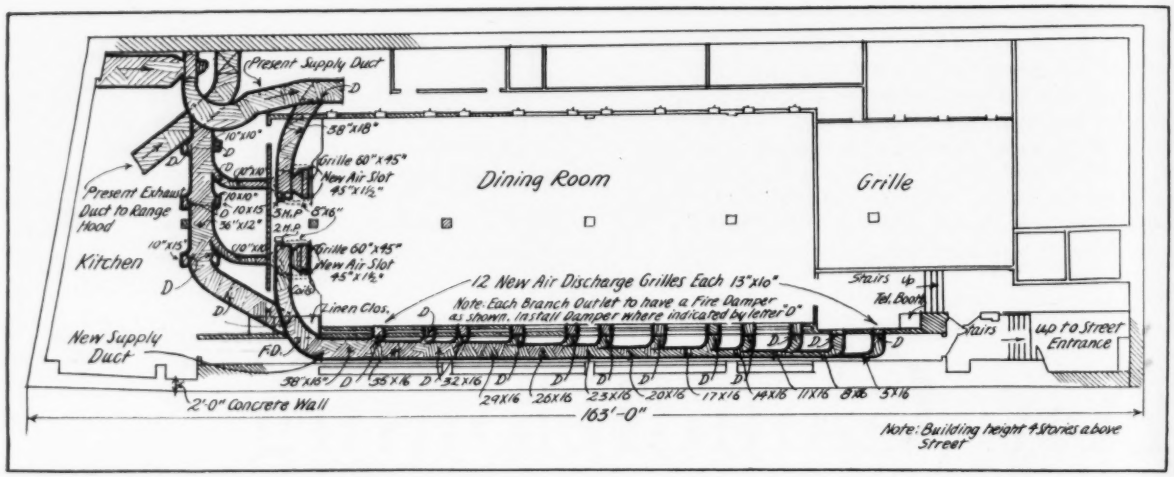
Along both sides of the dining room are air supply grilles, 15 on one side and 12 on the opposite wall, situated just below the ceiling. All outlets handle about 450 cu. ft. min., the entering velocity being somewhat less in linear feet per minute, grilles being 10 by 18 in. each. As stated, one-fourth of the air supplied to the room being cooled is fresh. It comes from the duct of a fan that brings outdoor air into the kitchen.

Beyond the dining room here seen is the "quick-lunch," or as it is called, the grill, which seats twenty-eight. It is cooled by means of the dining room equipment. Its exhaust duct, however, enters an independent, cased suction fan that discharges at the roof, some ten stories aloft.

Another distinctive feature of the installation is the covering of the supply ducts, one of which is here shown as it runs along the ceiling of a corridor. One-inch cork cemented onto the duct exterior prevents air-stream and mechanical sound transmission. Insulation is canvas jacketed. As the same supply duct system carries warm air in winter, no recirculation being had, the insulation has proved valuable in preventing heat loss. Each supply grille has a fire damper.

Contractor Smucker has enjoyed considerable success, also, in soliciting dentists and physicians, both of whom respond readily to air conditioning for several reasons. First, they recognize the health benefit derived, and, second, they know that comfortable conditions in their operating and waiting rooms enable caring for patients' needs quickly. Patients who previously hesitated to visit their dentist and doctor in warm weather now often seek their offices as relief stations from sweltering heat.

Much the same appeal has been used by Mr. Smucker in obtaining orders from beauty parlors, barbers, bakers, furriers, morticians and others interested in new ways to reduce operating expenses and increase their customers. Reduced to fundamentals these factors point to profit and, according to this contractor, the "pocketbook" appeal is the paramount business-getter just now.



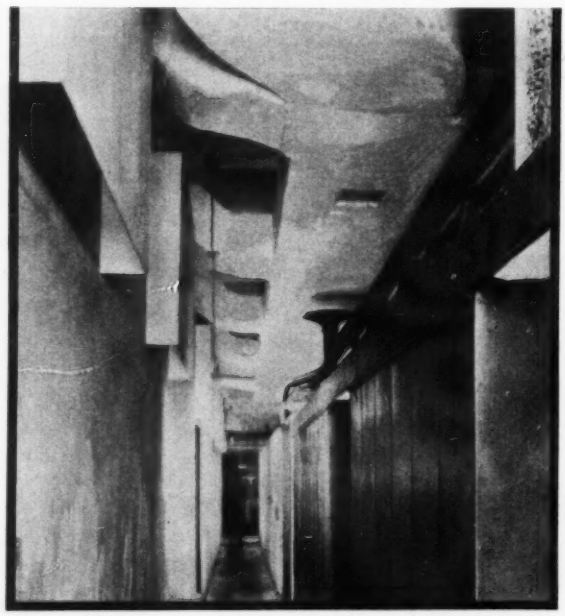


Fig. 3—Above is a plan of alterations and additions for the cooling and ventilating system installed in the New York restaurant, the interior of which is illustrated in Fig. 2

Fig. 4—At the left is a view of the duct work in a corridor adjacent to the dining room shown in Fig. 2. One of the main discharge ducts is illustrated. It delivers 6,600 cubic feet of air per minute through 15 grilles. There is a similar duct on the opposite side of the room delivering 5,000 cubic ft. per minute through 12 grilles. These ducts are covered with 1-in. cork and canvas and each outlet in the room is equipped with fire protection in the form of a fire damper

Record Crowd at Oil Burner Convention

ACTIVE public interest in automatic heat was disclosed when the members of the American Oil Burner Association met in Philadelphia March 5 to 9 for their 11th National Oil Burner Show and Convention. Matching this public interest were optimistic manufacturers and dealers enthused by the many new products available for meeting and arousing public demand.

A record attendance was registered with approximately 25,000 visiting the show, according to Harry F. Tapp, executive secretary. A factor of increasing importance in arousing interest in these oil burner expositions is air conditioning. Many displays showed the development of air conditioning equipment and this branch of the market was prominent in the minds of dealers.

R. M. Sherman, president, Silent Glow Oil Burner Corp., Hartford, Conn., was elected president. He succeeds M. J. Hammers who has taken over the active direction of the Oil Burner Code Authority. The new vice presidents are: W. J. Smith, Cleveland Steel Products Corp., Cleveland, O., J. A. Lattner, Century Engineering Corp., Cedar Rapids, Iowa, S. C. Hope, Gilbert & Barker Manufacturing Co., W. Springfield, Mass., and W. F. Brannan, Anchor Post Fence Co., Baltimore, Md.

The executive committee is comprised of the following: R. M. Sherman, M. J. Hammers, Petroleum Heat & Power Co., Stamford, Conn., W. J. Smith, W. S. Salway, Electrol, Inc., New York City and S. C. Hope.

The following have been nominated to serve three years as directors for the Manufacturers Division: M. J. Hammers, J. A. Lattner, R. C. Hoffman, York Oil Burner Co., York, Pa., S. C. Hope, J. H. Hirsch, Automatic Burner Corp., Chicago, M. F. Cotes, Motor Wheel Corp., Lansing, Mich., and Eugene C. Clark, Bethlehem Foundry & Machine Corp., Bethlehem, Pa.

C. J. Bassler, president of the Air Conditioning Corporation, Chicago, is the newly elected chairman of the dealers division, succeeding R. S. Bohn of the Preferred Utilities Mfg. Corp., New York City.

Featuring the code merchandising session was a review of the Code Authority activity by Morgan J. Hammers, chairman of the Oil Burner Code Authority, and an official administration announcement from the platform by W. Schwan, assistant deputy administrator NRA, who reported that the standard cost accounting system for the oil burner industry had been approved by the administration.

R. M. Sherman, newly elected president of American Oil Burner Association

ADOPT COST FINDING SYSTEM

Pointing out that this announcement had long been awaited by the industry, Mr. Hammers told the merchandising session that governmental approval of this uniform cost accounting plan promised a remedy for "persistent chiseling and severe price cutting on the part of the recalcitrant minority." While the industry's code stipulates that it is unlawful to sell below cost, there has been no uniform or effective method of cost determination up until the present moment, Mr. Hammers explained, adding that the whole job of code compliance "has been tremendously simplified and made doubly effective by this favorable decision on the part of the government, because price regulation is the heart of all other fair trade practice regulations as contained in this and other codes." "If there is developed a hard-hitting enforcement program in Washington," Mr. Hammers said, "the industry's new cost accounting plan will prove to be a most effective instrument for curtailing destructive price competition, and, through stabilization of the price structure, for placing all units of the industry on an economic basis. But whatever instruments are placed in the hands of the Code Authority, they must, to be effective, be fully supported by the enforcement machinery of the government itself." Mr. Hammers' report is given in full in this issue.

In commenting on NRA codes, in general, and the oil burner code, in particular, Mr. Schwan pointed out

800 Attended Annual Banquet at Oil Burner Show

that the oil burner code was among the first 25 codes to have been approved by President Roosevelt out of a total of some 325 and, consequently, the oil burner industry would be among the first to feel the beneficial effects of the Code Authority's work which, he said, he commended to the industry as being constructive and forward looking.

"We are now entering on the second phase of industry codes," Mr. Schwan said. "The immediate past has been concerned with writing codes and getting code authorities into active administration, whereas the time is now here when the fullest enforcement will be scheduled. In answer to the question as to whether the government and the NRA means to see individual code regulations fully enforced, the answer is, 'Yes'."

A standard cost accounting system has been approved for the oil burner industry. This is a final step in the development of the code by the Code Authority, for under the code as approved Sept. 18, it was mandatory upon all members of the industry to file their prices 10 days in advance of their effective date and that "no member of the oil burner industry shall sell or exchange any product of the industry at a price below his own individual cost as determined by a standard cost accounting system to be set up by the Code Authority for the oil burner industry, subject to the approval and supervision of the administration."

UNCOVER PRICE CUTTING

Thus, it is pointed out, the industry now has not only an open price plan but also a gage by means of which destructive price cutting may readily and quickly be challenged wherever it is recognized that an industry member is engaging in unfair competition by destructively undercutting his competitor on the basis of price alone.

T. K. Quinn, vice president of the General Electric Co., Schenectady, N. Y., who was also a speaker before the convention, discussed the function of the large corporation in the oil burner industry, and pledged the company which he represents, to fair and constructive competition. He condemned the policy whereby a large manufacturer operates in a particular field on a "lowest price" basis at a loss to himself and to the demoralization of his competitor, expecting to make the deficit up in other lines.

Other speakers were J. W. McEachern of Ernst & Ernst, who with members of the code authority developed the industry's newly approved regulation, and R. S. Bohn, chairman of the Dealer Division of the American Oil Burner Association.

The annual dinner and dance held on the evening of March 8 in the Crystal Ballroom of Hotel Benjamin Franklin brought out an unlooked-for attendance of close to 800 persons. Speakers at the dinner were Mr. Hammers, Mr. Sherman, W. Schwan, assistant deputy administrator NRA, Dr. Edward J. Cattell and E. P. Bailey who served as toastmaster.

Speakers before the engineering sales session on the closing day presented viewpoints on new economies in oil burner operation and fuel consumption, a better trained and engineer-minded salesman and the essential place of the oil burner in the air conditioning industry.

Talks on these varied subjects were delivered by the following: Nelson B. Delavan and L. M. Persons of the Penn Electric Switch Co., of Des Moines, Iowa, who gave a joint presentation on a study of home temperature control problems; Dayle G. Malone, of the Petro-Nokol Co., of Chicago, delivered a paper on engineer training for the salesman; Andre Merle of the Clyde R. Place Co., of New York gave a paper on air conditioning and F. W. Steirhoff, sales promotion manager of the Silent Glow Oil Burner Corp. gave a paper on range burners.

Messrs. Delavan and Persons discussed in detail the problem of controlling house temperatures so that there would be greater uniformity with a minimum consumption of oil and the possibility of developing control equipment so that there would be close control of "the comfort level in the rather poorly constructed home as well as in the well insulated and well-built home."

Six Months Under the Oil Burner Code

By Morgan J. Hammers
Chairman, Oil Burner Code Authority

FIRST of all on this date, nearly nine months after the passage of the National Industrial Recovery Act by Congress, I wish to treat this subject, in a manner that will avoid, insofar as possible, tedious repetition of statements, as for the purpose of clarifying some of the fundamental points pertaining to the Code of the oil burner industry.

I wish to make clear the fact that regardless of any impending changes in the setup of the Codes, Code Authorities and the whole scheme of things pertaining to NRA, resulting from the conferences at Washington—which the various members of your Code Authority are attending alternately with the sessions of this Convention—the things set forth herein have to do with the Code as approved by the President and as developed to date.

I believe it is well to divide the subject into about four parts, without taking any time in a discussion of what the NRA plan really is or what the oil burner code really is. We will perhaps do better to consider:

First—What the Code is supposed to do.

Second—How it does it.

Third—What has been done to date.

Fourth—The important things not yet accomplished under the Code, but provided for and scheduled for the immediate future.

I am asking your indulgence then to bear with me through the four divisions of this analytical discussion, keeping in mind that the general use of the word "Code" herein is intended as a contraction of the phrase which may properly be expressed as a schedule and system of operations on the part of industry in accordance with and under the provisions of the National Industrial Recovery Act.

This first section of the analysis as to what the Code is supposed to do is covered clearly in the first paragraph of the Code itself, a paragraph which, by the way, has been read and understood to a lesser degree perhaps than any other part of the Code.

Under the heading "Purpose" we read directly from the Code the following:

". . . this Code is set up for the purpose of increasing employment, establishing fair and adequate wages, effecting necessary reduction of hours, improving standards of labor, and eliminating unfair practices, to the end of rehabilitating the oil burner industry and enabling it to do its part toward establishing that balance of industries which is necessary to the restoration and maintenance of the highest practical degree of public welfare.

"No provision in this Code shall be interpreted or applied in such a manner as to promote monopolies, or monopolistic practices, permit or encourage unfair competition or eliminate, oppress or discriminate against small enterprises."

This language is clear.

Let us embark forthwith, therefore, into the second phase of the discussion as to how we are doing these things already set forth under the purpose of the Code. First, the all-important matter of increasing employment as it has been done through the initial period of this activity has of course, for the most part, been done through the shortening of hours, or, in other words, through a provision of the "share the work" plan, practiced to some extent by industry before the advent of NRA but made mandatory through the provision of NRA.

This matter of work schedules has from the first called for representative group action by the industry and by the officials of the National Recovery Act, which, through the long periods of earnest negotiation have agreed upon for the time being the schedules of hours set forth in this Code. These schedules as set up represent a meeting of the minds of the various parties at interest

Morgan J. Hammers

in this situation, namely—the employers; the employees; the consumer and the Government. We set to work with these schedules in good faith some months ago and due to the highly seasonal characteristics of our business we have encountered what may be more than unusual difficulties in the maintenance of the work week schedules than would apply ordinarily, but with the application of the rule of reason with respect to emergency features of the business the operations of the industry have followed through to date with an increase in labor through this work week reduction in hours.

The matter of apparent need of revisions of any

Report made at convention of American Oil Burner Association.

kind in the schedule will be touched upon later in this discussion. On this point, it is worthy of note that a maximum degree of propriety should become established and prevail in this matter of working hours by the end of this first year, for the reason that a closer adherence to schedules and a lesser application of rules of reason with respect to emergency situations will come within the order of things during the second season.

In the matter of establishing fair and adequate wages, the same negotiations and processes were used that applied in the determination of working hours, the brunt of effort in this undertaking, of course, falling on the shoulders of the employers, who have agreed with the NRA officials to these schedules of wage rates that place the earnings of the employees at the highest possible point consistent with safe conduct of the employers' businesses, in a Herculean effort to restore the buying power of wage earners.

Improving standards of labor in our industry has been a matter of less magnitude than that pertaining to certain other industries, due to the fact that labor standards in the oil burner business have, for the most part, been high in every respect. A further step, however, has been taken through the elimination of child labor. The blanket provision providing for collective bargaining through representatives of their own choosing with employers and the provision that they shall be free from interference, restraint or coercion of employers or their agents while applied in full mesaure in our industry, adds little to the standards of labor in the oil burner business—for the reason that these standards have been generally and continuously at a very high level as compared with standards of labor pertaining to many other industries.

ELIMINATE UNFAIR PRACTICE

The elimination of unfair trade practices is provided for to a fairly complete extent through the industry regulations of the Code. These regulations, as set up, definitely and specifically in our Code rule against deceptive practices, false or misleading advertising, mislabeling, misbranding or the removal of the manufacturer's label as unfair competition. There are enumerated at considerable length under "Industry Regulations" in a clear and concise manner those things among trade practices which have been heretofore more or less common, not only in this but in other industries, but which, in accordance with our Code, are now classified as constituting unfair competition.

It is true that the American Oil Burner Association has heretofore established and maintained industry regulations or rules of fair trade practice, but, as in most cases pertaining to such situations, they have been difficult of enforcement due to the selfish and sometimes unscrupulous procedures on the part of industry members. The regulations as set forth in this Code, and as interpreted in certain bulletins that have been issued to the trade, provide an effective and wholesome set of working conditions with respect to all trade practices of importance in which our industry is concerned. These regulations now have the effect of law under the National Industrial Recovery Act and are becoming more and more clearly understood as a result of wide distribution of interpretations and data by the Code Authority decentralized through the activities of the hundreds of local Area Governors and also through the effective cooperation of the trade papers, which have carried much educational matter direct to the members of the industry. The full cooperation of the industry, directed in accordance with the procedure just outlined, will quite generally eliminate these unfair trade practices. It is much preferable, of course, that this effort be made voluntarily—otherwise it is scheduled to become effective through compulsion.

USE OPEN PRICE PLAN

In addition to what has been said and under the matter of trade practices comes the all-important matter of prices in selling. Under the general classification of trade practices we come to the discussion of so-called chiselling and other things pertaining to the pricing of merchandise at levels that are too low. Naturally, our industry has taken a great interest and put forth determined effort to bring about proper conditions in the setup and administration of codes with respect to the matter of selling prices; due to the fact that in this industry much under pricing and price cutting has been done on such a basis as to result in selling at levels much below the seller's cost. The mere maintenance of proper wage rates on a uniform basis does not overcome this difficulty in the oil burner business, even though those particular features have much to do with overcoming the under-pricing of merchandise in some other industries. In our Code, the system of open price agreements and uniform cost accounting are provided for the purpose of putting into effect and maintaining the proper pricing of merchandise at a level equal to at least cost recovery. The open price agreement, in connection with which prices are filed and exchanged among members of the industry, is not new in business—in fact has been used in a number of industries more or less continuously over a considerable period of years, with the effect that wastefully low pricing has to a considerable extent been avoided.

STUDY INDUSTRY'S COSTS

The participants in an open price agreement have the advantage that each knows the prices of the other during all of the time that the other's prices are in effect, revisions being permissible under a ten-day notice clause. This plan precludes the chance of any one concern putting on and maintaining a low price sale at any particular time without the knowledge of other concerns, therefore the facility running to all competitors enables them to do likewise—the net result being a tendency away from destructive prices. In conjunction with this open price agreement, an additional feature of great importance is provided in the Code in the form of a uniform cost accounting system for both manufacturers and dealers and the various divisions of the industry. This system is designed to make readily determinable the point at which cost recovery is attainable. A leading firm of public accountants nationally organized has been entrusted with the development of this facility, which has been reduced to manual form for both manufacturers and dealers in the various divisions of the industry—and is workable to an extent well within the bounds of

(Continued on Page 108)

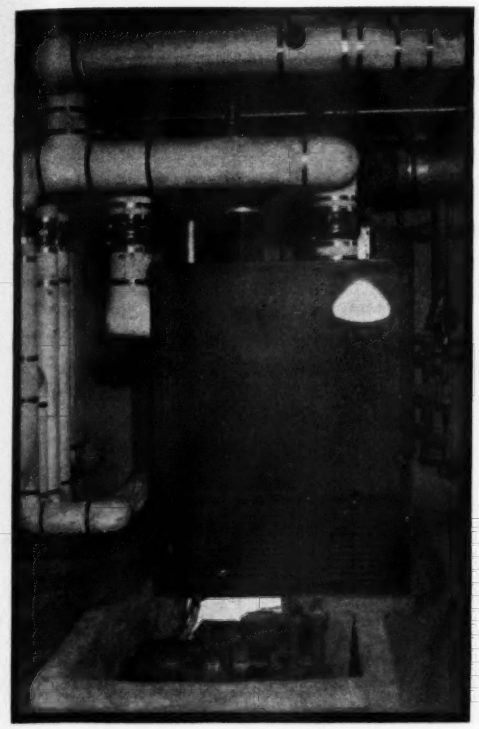


Fig. 1—The above illustration shows one case where oil burner installation was pitted under a gas boiler

Both methods of Installing oil burners under gas designed boilers are discussed in this practical article describing the work of a successful oil burner dealer in Milwaukee section

By H. L. Bredlow

Raise the Boiler or Pit the Burner

After a considerable amount of experimenting in 1929, the Shellenberger-Gregg Company of Milwaukee, oil burner dealers, installed a number of oil burners under gas boilers in the Milwaukee area. These installations have in turn helped to sell many other conversions for this dealer.

The success of this application of oil burning lies in the design and efficiency of the equipment involved plus the construction of a heat and gas proof boiler base enclosing a well designed brick combustion chamber. In conversion, in this dealer's experience, the alternative methods of raising or pitting the boilers have proven equally satisfactory. The peculiarities of the individual heating plant and basement (such as head room, pipe layout and underground obstructions) decide which method is to be followed.

In raising the boiler, the gas burner and all apparatus are removed. The jacket is removed and after the headers and returns have been disconnected the boiler is jacked up approximately 18 in. See Figs. 2 and 5.

To support the boiler, a stand as illustrated, can be made in the shop and assembled on the job. The corner members are 2-in. pipes, slotted and bolted to two T-irons. Strength is given by band iron braces which are bolted a little higher on one end to avoid interference with the burner. The dimensions of the boiler govern the length and width of the stand while its overall height should be 18 in. Pipes ½ in. in size, bolted across and over the top of the ends of the T-irons will keep the boiler from moving off its support. See Fig. 6.

Another manner of sustaining the boiler involves less material and work, and proves very satisfactory on the types of boilers with legs. Four 2-in. pipes are cut allowing enough material in one piece for 18 in. as legs, below the boiler legs, and for a splice one-third the length of the boiler leg. This semi-circular splice is made by

cutting the pipe lengthwise, in half, from the 18 in. length to the end. With the boiler resting on the niche above the round portion, the top or semi-circular splice

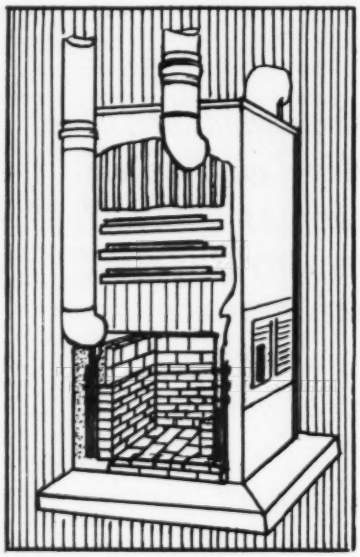


Fig. 2—The above sketch illustrates how the combustion chamber is bricked in after the boiler is raised

is bolted to the boiler legs and the extension is held firmly. See Fig. 5.

After the boiler is settled on one of these supports, the headers and returns are connected. With this accomplished there is no danger of damage from movement of the boiler and the job is ready for the combustion chamber and burner installation.

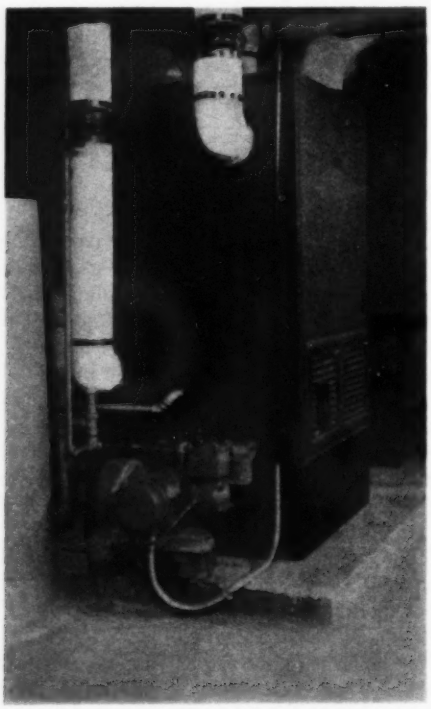


Fig. 3—Left, view of completed installation of the raised-boiler type. Note oil burner

The fire box should be of the proper dimensions so that the amount of oil required to be burned to support the heating load, will be burned with highest efficiency. The rule (used in computing fire box dimensions) of three cubic feet of furnace volume for every gallon per hour consumed can be put to good practice here, and yet the bricking should shield all metal supports right up to boiler water leg. A peep hole 4 in. square is provided in this dealer's installations, in the wall most accessible and is filled by two loose bricks when not in use.

Around the combustion chamber and in all openings, insulation is packed out flush to where the casing of the boiler will be. A 20-gage galvanized sheet metal, four-piece box then is assembled about the base. Each piece is flanged about an inch on the top and bottom, the top flange to fold under the boiler case, the bottom flange to rest on the floor in the opposite direction to be later cov-

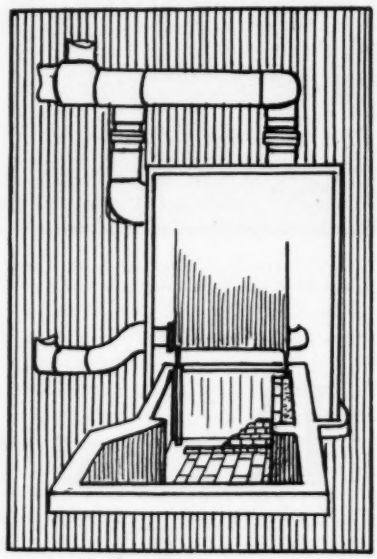
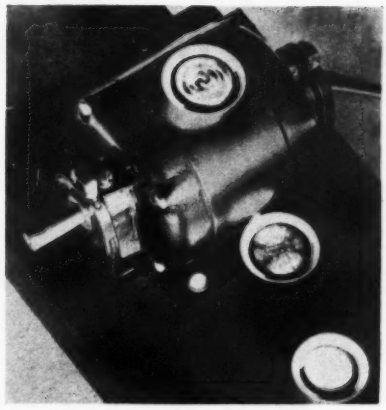


Fig. 4—These details show features of the installation when the burner is pitted

ered with a rim of cement. The other two ends are drilled for stove bolts or machine screws.

In one piece a small door is fastened to cover a peep hole, and in another, a hole is made by cutting up from the end of the piece. This is for the burner draft pipe and is to be used on the side where the burner is installed. The four pieces are assembled by bolting angle irons, of the same metal, over the ends at the three corners. The fourth corner is fastened together with metal screws after the piece with the hole has been placed over draft pipe. The chamber cover is finished very neatly this way, and after the boiler jacket has been replaced, it is ready for a coat of paint.

To pit the boiler the gas burners and apparatus only need be disturbed. The boiler jacket seldom is removed in working from beneath. By breaking the concrete and digging out in the space first where burner eventually will rest, access to the space below the boiler is obtained. If care is taken in breaking the concrete, the boiler can remain



The three pools of mercury in the illustration at the right indicate both vibration and lack of vibration at the various points of contact

Novel Test Shows Effectiveness of Motor Mounting

THE effectiveness of mountings in damping out vibrations is shown graphically by three little pools of mercury.

Two of the shallow cups containing the mercury are secured to the motor itself. The third mercury cup is fastened to the board to which the motor is bolted. The surfaces of the mercury in the three cups show how thoroughly the mountings absorb the motor vibrations before they reach the baseboard. In the two upper cups, there is visual evidence of the slight vibration inherent in the motor, but the lowest cup shows that none of this is transmitted to the support to which the motor is attached.

If the cushioning is "short-circuited" by jamming a screw-driver or other object between an end-shield and the supporting cradle, the pool on the board immediately will show vibrations of a magnitude equal to those seen in the two pools on the motor.

This method of visually demonstrating the suppression of vibration was chosen because the measured amplitude of the vibrations involved is small and because the surface of the mercury is extremely sensitive to tiny disturbances.

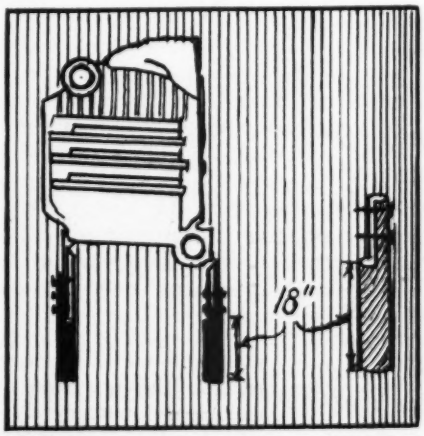


Fig. 5—Method of supporting boiler in elevated position when individual leg extensions are used

on the floor, and the pit 22 in. in depth can be dug past the boiler's edge a distance of 3 in.—the boiler being sustained by several jagged edges and later by the wooden form for the concrete pit. See Figs. 3 and 4.

When the pit is finished, where possible, a drain should be laid. Even if the drain is on the same level with the sewer it can be made and left with a plug.

Inside the pit, the concrete work (preferably waterproof) is then built and its 3-in. wall should come up about 2 in. above the floor to form a rim around the burner opening as well as the boiler.

When the concrete has dried thoroughly the boiler is supported, as described in the foregoing with either the stand or the leg extension. The stand is very handy here for it can be assembled beneath the boiler as the wooden concrete form and supports are removed.

After the insulation is packed against the walls around the metal stand or legs and up to the boiler insulation, the job is ready for the fire box. This is constructed in the manner already described. The brickwork should

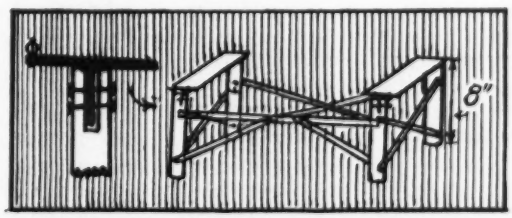
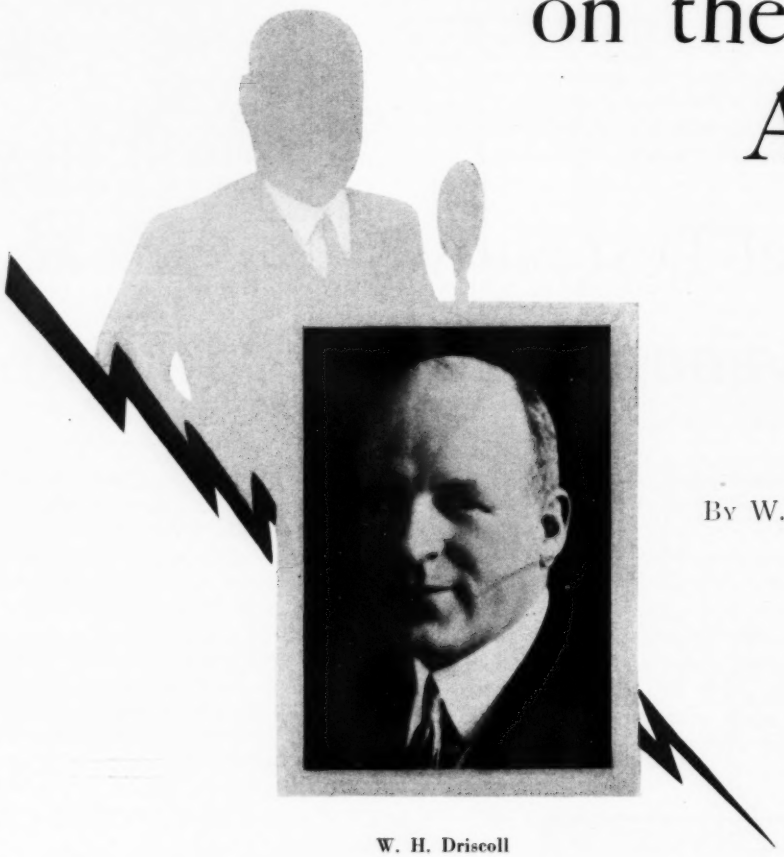


Fig. 6—Method of supporting boiler in elevated position when a complete pipe stand is made for the purpose

protect all of the metal supports and should be extended right up to the boiler containing the water. A two brick peep hole should not be forgotten and is made generally above the draft pipe.

Air Conditioning on the Air



W. H. Driscoll

By W. H. Driscoll

The ideas contained in this paper were presented over the radio by Mr. Driscoll who is vice president and chief engineer of Thompson-Starrett Company, New York contractors. They give a brief but very clear and interesting picture of the subject

SCIENCE has pointed the way and industry has followed the lead in contributing to modern civilization a development that offers much in the way of comfort and of health to mankind. It is the science of air conditioning.

This term is of comparatively recent origin and while the average person has a somewhat hazy notion that it has something to do with the cooling of air in theaters, the fact is that the conditioning of air contemplates many things in addition to cooling and its application has been extended to all kinds of structures used for human occupancy, as well as for industrial purposes.

Air conditioning had its origin in the demands and necessities of industry. Its benefits in terms of comfort and health to the human race were of course appreciated by those having an interest in the subject, but the studies that led to the development of equipment, and advancement in methods, had their initial urge in the textile mills, in tobacco factories, in the processes of candy making and, successively, in literally hundreds of industries in which the vagaries of the weather had a definite influence on operating costs and quality of products.

In candy making, for instance, controlled weather in factories not only insures a better product but results in widespread economy. Through control of heat and humidity of the factory air, the starch moulds in which chocolate creams and other filled confections are poured are maintained in such condition that candy products are more perfect, valuable time is saved and manufacturing costs are reduced.

(Continued on Page 105)

Automatic Heat and Air Conditioning Questions

COST OF REFRIGERATION

To the Editor:

In the February, 1934, issue of Automatic Heat and Air Conditioning, you have an article "Awnings Reduce Cooling Load." In this article on page 65, paragraph heading, "Average Cost of Cooling Home," is the statement that "The average first cost of central plant cooling equipment is approximately $334.00 per ton of refrigeration."

Please advise us whose cost this figure represents. Is it the home builder's cost or the contractor's or dealer's cost? Also give us an itemized list of the equipment required for this, with approximate cost of each item.

St. Petersburg, Florida. C. W.

To the Reader:

We have received the following from the author of the article:

"I am sorry that the statement in my article 'The average first cost of central plant cooling equipment is approximately $334.00 per ton of refrigeration' is rather ambiguous. I should have made this clearer. This figure refers to the refrigerating machinery only, that is compressor, condenser, liquid receiver, scale trap and strainer, motor, controls (high pressure, back pressure and motor starter). In other words, it is the average cost per ton for refrigerating machines or compressors which are on the market at the present time and applies only to sizes ranging from one to five tons. This is the list price of such equipment and therefore should be the cost to the home builder."

RAPID METHOD OF FIGURING OIL

To the Editor:

In your book "Oil Burner Heating" which I purchased a day or so ago, I found examples in Chapter 4 —Rapid Method of Figuring Oil Consumption which I cannot understand nor reconcile with the results to be expected.

For example on Page 32 the paragraph regarding oil consumption—for 70° - 0° 360 gal. is required.
for 70° -20° 504 gal. is required.

It does not seem logical that more oil would be consumed for a 50 degree temperature difference than for a 70 degree temperature difference. Also in the example following the author shows less oil consumed for an 80 degree temperature difference than is required for a 70 degree temperature difference. It seems to me that the factors 7/5 and 7/8 are wrongly applied to give the results sought after.

I realize that this book has been very carefully edited and I feel that I have missed the author's point entirely.

Your book is well worth the money asked for it, as it is written so anyone reading it cannot help but get real useful information from its pages.

Albany, New York. M. C. E.

To the Reader:

The paragraphs and charts referred to in the foregoing inquiry are reprinted in the following:

The curves of Figs. 1 and 2 show the fuel consumption in gallons of light domestic burner oil for various sizes of hot water and steam heating plants for a heating load of 1,000 degree-days, assuming radiation is figured for 70 deg. Fahr. inside and zero outside. All that is necessary to use such a chart to estimate the fuel consumption in your locality is to determine the number of degree-days and make the necessary adjustment. Take for instance the case of Boston, Massachusetts. Let it be required to determine the number of gallons of fuel which will be required per year for a heating job of 500 sq. ft. of standing steam radiation in Boston assuming the radiation has been figured for 70 deg. Fahr. inside and zero outside. The number of degree-days heating load for Boston, Massachusetts, is about 6,055. Entering the curve in Fig. 1, we find that the number of gallons required for 500 sq. ft. of radiation and 1,000 degree-days is about 550 gallons. We must then multiply this number of 6,055 ÷ 1,000, which gives 550 × (6,055 ÷ 1,000) = 3,330 gallons of oil per year should be the approximate requirement. Similarly if the radiation were 500 sq. ft. of water radiation instead of steam, the reference would be to the curve of Fig. 2 and under such conditions the approximate requirement would be 360 × (6,055 ÷ 1,000) = 2,180 gallons of oil. Similarly, suppose the fuel consumption be required for an installation of 500 sq. ft. of standing steam radiation at Baltimore, Maryland, assuming again 70 deg. Fahr. inside and zero outside. The number of degree-days

for the Baltimore heating season is approximately 4,591. Thus, from Fig. 1 as before, we determine the value of 550 gallons for 1,000 degree-days, so that for Baltimore the fuel consumption for 500 sq. ft. of steam radiation should be 550 × (4,591 ÷ 1,000) = 2,525 gallons. Please note that in the use of these curves the only data required are (1) the amount of standing radiation and type of system; (2) the number of degree-days heating load for the locality, and (3) the

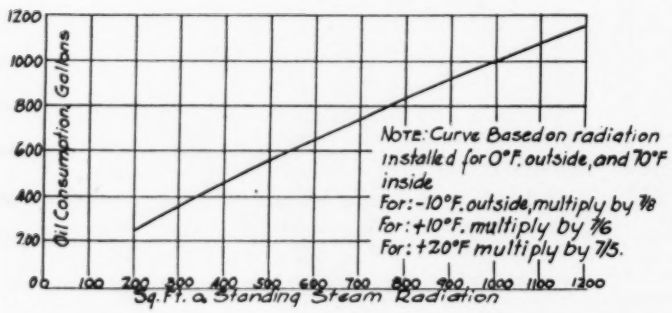

Oil Consumption, Gallons
1200
1000
800
600
400
200
0
0 100 200 300 400 500 600 700 800 900 1000 1100 1200
Sq. Ft. of Standing Steam Radiation
NOTE: Curve Based on radiation installed for 0°F. outside, and 70°F inside.
For: -10°F. outside, multiply by 7/8
For: +10°F. multiply by 7/6
For: +20°F multiply by 7/5.

Fig. 1

temperature conditions for which the radiation was figured.

With regard to the first factor, the square feet of installed radiation, bear in mind that if a house is over-radiated, the excess radiation does not require any fuel. Therefore in order that a true estimate can be made for a given house, the amount of radiation which is truly required should be used in estimating the probable fuel consumption. Take for instance a house in which there is installed 700 sq. ft. of standing radiation, but, only 600 sq. ft. are actually required. So far as fuel consumption is concerned the figure of 600 sq. ft. of radiation only is significant. This means that when we are quite desirous of getting a good estimate of the radiation requirements of a given structure, we should estimate the required radiation and determine whether the correct amount is installed. When insufficient radiation is installed the curves presented in Figs. 1 and 2 do not hold good.

The second factor, the number of degree-days heating load must be obtained from some tabulation such as those which have been mentioned above.

The third factor—which is based upon the outside temperature for which the heating system has been figured, is given in Figs. 1 and 2. In order to demonstrate the use of this factor let it be required to estimate the probable fuel consumption for a southern city such as Savannah, Georgia, having a heating load of 1,517 degree-days and assume that the radiation has been figured for 70 deg. Fahr. inside temperature and 20 deg. Fahr. outside temperature. Let it be assumed that there is installed 500 sq. ft. of standing water radiation. From Fig. 2 for 500 sq. ft. of water radiation, it is seen that 360 gallons of oil are required for 1,000 degree-days, for radiation based on 70 deg. Fahr, inside and zero outside. This must be multiplied by the factor 7/5 in order to convert to the temperature conditions for which the radiation was figured, according to the conditions of the problem. When this is done we have 360 × 7/5 = 504 as the true consumption per 1,000 degree-days for 500 sq. ft. of water radiation. Thus the probable seasonal oil consumption will be 504 × (1,517 ÷ 1,000) = 765 gallons per season.

In order to further illustrate the use of the fuel consumption curves, let it be required to determine the probable number of gallons required for Lincoln, Nebraska, having a heating load of 6,231 degree-days. Let it be assumed there are 500 sq. ft. of steam radiation installed. The radiation having been figured for 70 deg. Fahr. inside temperature and—10 deg. Fahr. outside temperature. From Fig. 1 the consumption corresponding to 500 sq. ft. will be 550 × 7/8 in order to adjust for the different outside temperature. The probable seasonal fuel consumption will then be 550 × 7/8 (6,231 ÷ 1,000) = 3,000 gallons.

In these figures there is no reference to the loss due to piping or the efficiency of the plant, these bothersome factors are what the writer has attempted to incorporate in the curves given in Fig. 1 and Fig. 2 so that the user need not be concerned with them.

So much for the original information referred to in the reader's inquiry. The following is the explanation of the points he has raised:

It should be remembered that while the fraction 7/8, 7/6 and 7/5 in the charts of Fig. 1 and Fig. 2 appear to give contrary results, the radiation installed in different locations varies. The building in Savannah, where the base temperature is 20 deg. Fahr. would have less

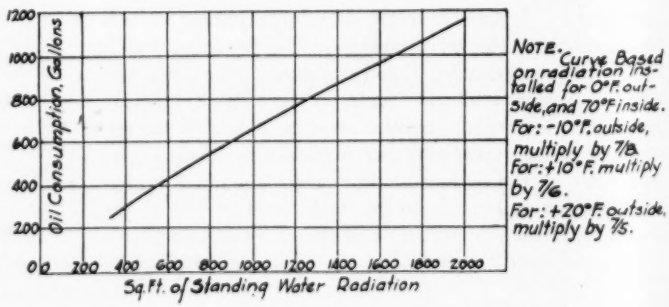
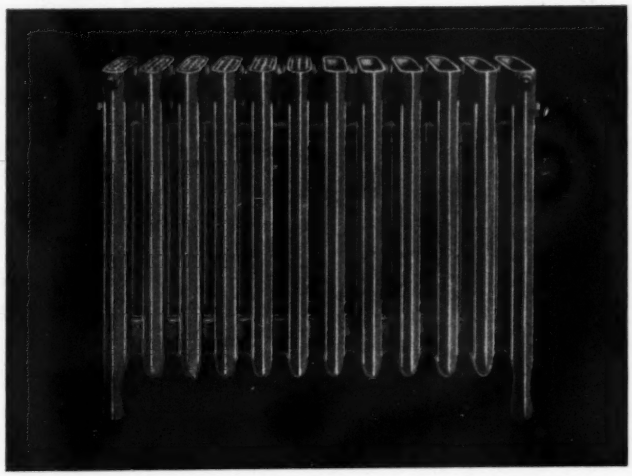

Oil Consumption, Gallons
1200
1000
800
600
400
200
0
0 200 400 600 800 1000 1200 1400 1600 1800 2000
Sq. Ft. of Standing Water Radiation
NOTE. Curve Based on radiation installed for 0°F. outside, and 70°F inside.
For: -10°F. outside, multiply by 7/8.
For: +10°F. multiply by 7/6.
For: +20°F. outside, multiply by 7/5.

Fig. 2

radiation installed than it would if it were located north where the base is minus 10 deg. Fahr. and naturally would consume less oil per heating season than it would if located in a cold climate.

The oil consumption per square foot of radiation per 1000 degree-days would be greater than if the radiation were figured for zero outside temperature. This is because while the amounts of radiation vary, the common amount to which both are referred is taken as a constant, namely 1000 degree-days. It should be pointed out further that if T equals the outside temperature used in

A Simple, Effective Humidifying Radiator!



HUMID-HEET
Humidifying Radiator

The Utica Radiator Corporation helps its dealers sell the public. Above is a small reproduction of an advertisement in The American Home. The Utica Finance Plan enables you to offer easy monthly terms.

Simple—efficient—inexpensive—that's the story of the HUMID-HEET humidifying radiator. It provides healthful humidity in the home at a fraction of the cost of the more elaborate systems now on the market. It is simple to install, either on new jobs or for replacement. HUMID-HEET provides an opportunity to interest new prospects and secure more business. Don't miss this opportunity. Send for complete information.

MIDGET Radiators Save Space

Another exclusive item is the MIDGET Radiator which does the same amount of work as the ordinary radiator, but occupies one-third less space. Due to its small size, it may be concealed within the walls. Even when used in the open, it is both inconspicuous and attractive.

UTICA RADIATOR CORPORATION
UTICA, NEW YORK

Boston Chicago Detroit Harrison Philadelphia Washington

Also a complete line of radiation, square jacketed boilers and hot water supply boilers.

ORCHIDS TO YOU

Whenever neighbors talk about their Refrigerators, Oil Burners or Air Conditioners it's "An Orchid to You" or, it isn't—depending entirely on the care and conscientious design put into the product... Good reputations are built in. And, because the motor is a most important factor in continuous and satisfactory performance, manufacturers and designers have for years availed themselves of Century Specialized Engineering experience ... Up to 600 Horse Power.

CENTURY ELECTRIC COMPANY
1806 Pine Street St. Louis, Mo.
Offices and Stock Points in Principal Cities

Century MOTORS

figuring the radiation for any building and Q equals the oil consumption for 1000 degree-days by the graphs, (where zero deg. Fahr. is used as the base temperature) then the oil consumption of the building for 1000 degree-days equals

$$\left(\frac{70}{70 - T}\right) \times Q.$$

To state this in a different way, it should be pointed out that a house in Boston, where radiation is figured for 70 deg. Fahr. and zero outside, having 500 sq. ft. of standing steam radiation would be very much smaller than a house in Savannah, Georgia, which also requires 500 sq. ft. of steam radiation figured for 70 deg. Fahr. inside temperature and 20 deg. Fahr. outside temperature.

These tables merely point out that a big Savannah, Georgia, house would require more fuel than the small Boston house even though both houses contain the same amount of standing steam radiation. One reason for this is the larger house would require longer steam mains and branches with a corresponding increase in piping losses and oil consumption.

Will Distribute Oil Burners in Greater New York

Sam S. Glauber, Inc., of New York City, will distribute the products of the Fluid Heat Division of the Anchor Post Fence Company of Baltimore, Md., in Manhattan, Brooklyn, Bronx, Westchester and Queens. Douglas Haire and A. S. Pent of the Glauber Company will be in charge of its oil burner supply department.

Sales Engineering—

(Continued from Page 75)

swering questions satisfactorily that are apart from the usual sales method of application.

At the offset, the customer is going to have more confidence if you start out with a thorough investigation of all the conditions at hand, rather than jump into your recommendations before such a survey is made. Remember, it is a build-up we are after, for when the customer begins to analyze all his proposals and begins to think of all that took place and the answers to his questions as well as the sales presentation, you are going to welcome the advantage of a complete survey. Besides this there are many little things that you find out in making a survey that open up a big point to drive at during the sales presentation that follows.

With this survey, the dealer or salesman needs a few other things with which to interpret it to advantage. He needs a schedule of net load recommendations for heating boilers, and a catalog of radiator ratings. With the aid of a radiator catalog and plain multiplication, the total standing radiation can be determined easily. Knowing this, and referring to the net load recommendations for the boiler in question, it is then easily found as to whether the boiler is undersized or oversized.

All of us have learned that undersized boilers tend

toward high oil consumption and if some unbiased advice can be given concerning the proper alterations or preparations of a boiler for an oil burner installation, it is possible to make a friend and avert probable grief. Some companies depend upon an installation man to check such before an installation is made. This still can be done, as none of us are infallible and two opinions, particularly upon a close decision, are always of value.

With the information thus afforded by a complete survey and having already checked the boiler for its adaptability to oil heat, to see that there are no gross heating irregularities and that the boiler is of proper size, then it is time to make recommendations for the burner to be sold. Much can be said about the adaptability of oil burners to the different types, sizes and styles of boilers, but I do not intend to touch on any phase of that in this article.

NOT ONLY A PROBLEM OF SALESMANSHIP

Securing oil burner business is not a problem of salesmanship alone and a full and complete survey reveals facts to the dealer that makes it possible for him to make more intelligent recommendations and presentations, regardless of the type of oil burner he is selling. Information contained on such a survey also makes it possible to discuss to completion many of the other questions that come up in connection with oil burner selling and installing, and in many cases leads to more business.

The question of domestic water heating often comes up. With the information contained on the survey sheet, an intelligent quotation can be made and a thorough and complete discussion can be held regarding it.

Numerous other questions might come up that could be answered readily by reference to the survey sheet. For instance, a customer might ask, "What makes my boiler smoke?" If upon reference to the survey sheet, it is noted that there are two 90-degree elbows in a smoke pipe 8 feet long, the answer might well be: the elimination of one or possibly both of the 90-degree elbows and the use of one or two 45-degree angles.

Most customers are quick to pick up a personal interest shown in his job. We are all prone to think more of our doctors or dentists if they take a personal interest in us—the same is true of a customer in his inner feelings—whether or not he shows it—toward a salesman or dealer who takes a personal interest in his heating problems.

There are a great many factors beyond the control of a dealer who installs an oil burner, if none other than the human element, that preclude his making an accurate estimate of oil consumption. I am a firm believer that drafts, heating boilers and human beings are all alike, in that no two of them are exactly alike. Consequently, it would take even more than an engineer to class himself as accurate in figuring oil consumptions. Nevertheless, we are called upon from time to time to give approximate estimations that cannot be wild guesses, concerning oil consumptions. For this reason, I am going to give you my idea of figuring oil consumptions. In Chicago, where there are 6,250 degree days in the average heating season, we use a factor of 4.6 gallons of oil per square foot of steam, total tax. This factor is used for the average conditions. If the conditions of the home are unusually good such as being insulated and weather-

STORAGE HEATERS
"MADE OF COPPER"

The three 1000 gallon, 400 pound pressure, *all Copper* Storage Heaters installed in the building illustrated are representative products of Gerstein & Cooper.

In placing such business with Gerstein & Cooper, contractors are always assured of Dependability, Minute Attention to Materials, Workmanship and Construction Details backed by many years of practical experience.

These qualifications are your assurance that any type of Tank or Storage Heater requirements may safely be entrusted to this up-to-the-minute organization. Estimates furnished cheerfully without obligation.

GERSTEIN & COOPER COMPANY

New York— South Boston, Mass. —Baltimore, Md.

Troop Water Heater Co., Pittsburgh. Edward Sinn, Harrison, N. J.
Strong, Carlisle & Hammond Co., Cleveland, Ohio

It's a KOVEN Product

The Safe Storage of Oil an important factor in Oil Burning Equipment Installation

Hazards of oil storage necessitates the using of only the best tank for this purpose.

The difference in cost between a good tank and a cheap one is so small that it is foolhardy to jeopardize the reputation of the oil burner in trying to save on a tank.

The Koven organization is making quality fuel oil tanks built strictly in accordance with New York City and Underwriters' specifications for some of America's leading oil burner manufacturers. They know—that when they use a Koven product in an oil burner installation, their tank worries are over.

Other Koven quality products:

RANGE BOILERS Galvanized or Copper
SCULLERY SINKS
BARBER BOILERS
KOVEN-PARACOIL TANKS

STORAGE TANKS Steel or Copper
EXPANSION TANKS
SEPTIC TANKS

Insist on the best by asking for Koven products from your jobber.

Send for new Plumbers' Hand Book.

L.O. KOVEN & BRO. INC.
JERSEY CITY, N.J.

stripped, or if there is a 6-section upright boiler or a special oil-burning type boiler, we can allow for these advantages by decreasing the factor proportionately. On the other hand, if the home is of poor construction, or if it is unusually exposed to winds on the North and West, or if it has a 4-section boiler, we are then obliged to increase the factor accordingly. Here we must rely on judgment in varying from what might be called the average conditions.

KNOW TECHNICAL INFORMATION

It is always desirable to know the principle and operation of the various types of heating systems you come in contact with. Knowing the general, fundamental and basic principles of each different type of system often enables one to answer questions more clearly, as well as have a more complete picture in his own mind of what he is talking about.

It is sometimes of interest and advantage for the dealer or salesman to know certain other technical information, which oftentimes comes into use. I, by no means, suggest the use of these terms and phrases as a steady diet for the salesman, but where they do come in handy they are as welcome as a port in a storm. A salesman should know—that a desirable stack temperature is less than 400 F.—that a proper draft over a fire is .02 in. to .05 in.—that a desirable draft in the breeching is from .12 to .15 in.—that a domestic job is working satisfactorily if it has a CO-2 of 11%, and that this fire will be slightly smoky—that CO-2 means the flue gas analysis in its relationship to the excess air—

That a	15%	CO-2 Represents	No Fuel Loss
That a	14%	CO-2 Represents	0.83% Fuel Loss
That a	13%	CO-2 Represents	1.78% Fuel Loss
That a	12%	CO-2 Represents	2.89% Fuel Loss
That a	11%	CO-2 Represents	4.21% Fuel Loss
That a	10%	CO-2 Represents	5.74% Fuel Loss
That a	9%	CO-2 Represents	7.67% Fuel Loss
That a	8%	CO-2 Represents	10.08% Fuel Loss
That a	7%	CO-2 Represents	13.14% Fuel Loss
That a	6%	CO-2 Represents	17.25% Fuel Loss
That a	5%	CO-2 Represents	23.00% Fuel Loss
That a	4%	CO-2 Represents	31.62% Fuel Loss
That a	3%	CO-2 Represents	46.05% Fuel Loss
That a	2%	CO-2 Represents	74.70% Fuel Loss

that a gallon of oil is capable of heating 350 square feet of steam, total tax, using oil of 142,000 Btu. contents and considering a boiler efficiency of 60 per cent—that it requires approximately 100 sq. in. of deck area to each gallon of oil to be burned—that it requires approximately 3 cu. ft. of combustion space for each gallon to be burned—that the unit of heat is a Btu. and that it is the amount of heat required to change the temperature of one pound of water 1 deg. Fahr.—that a degree day is a day in which the average inside temperature is 1 deg. Fahr. higher than the average outside temperature.

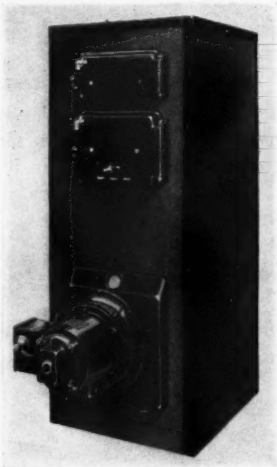
And so it is, engineering back-ground, followed by a beautiful sales presentation, but with it all, it takes work and plenty of it, which is not a new realization to most of us in the oil burner business, as we trod up and down the doorsteps of customers' homes and through the doors of architects, engineers and real estate offices in search of business.

Products FOR Dealers

This section gives a report of the latest news of selected automatic heat and air conditioning products. The general new products section starts on one hundred twenty-three.

Oil Burner and Boiler Combined

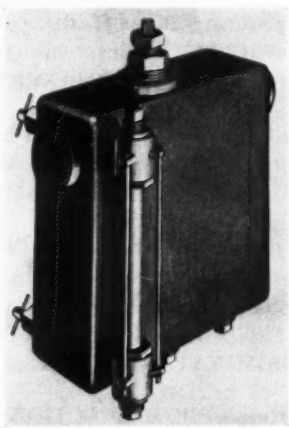
The oil burner which has been built into the combination unit shown in the accompanying illustration is of the horizontal rotary cup type. The boiler and burner combination is shipped from the factory complete with refractory material. The burner operates on number 3 fuel oil. It is fully automatic and can be controlled manually when desired. The fully automatic burner is



equipped with combination gas electric ignition, hence can only be installed where gas is available, but will function properly with either natural, artificial, or Pyrofax gas. The exact amount of air for the amount of oil being burned is governed by an air adjustment built into the burner. Petroleum Heat & Power Company of Stamford, Conn., and American Radiator Company, of 40 W. 40th St., New York City, are the manufacturers of this combination equipment.

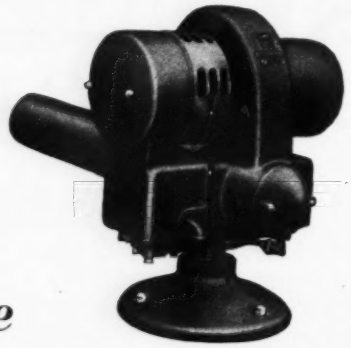
Device for Removing Condensate

The equipment shown in the accompanying illustration is described as being a new and different unit for removing condensate from steam condensing devices, kettles, presses, heating and processing machines and the like. It is described as relying for its operation on the utilization of the thermo-dynamic properties of steam and hot water to regulate the flow through the device. It is equipped with a water glass designed to indicate at all times at a glance, whether the equipment to which it is attached, is operating. Another feature claimed for this unit is that it provides a means for handling entrained air, the capacity of which increases in proportion to the amount of air present. In addition, it is described as being able to operate on any steam pressure up to the mechanical strength of its body without any exchange of parts. This equipment is offered in various sizes from ½ in. to 1½ in. by The Coe Manufacturing Company, of Painesville, Ohio.



A Humidifier For Homes

A humidifier which is rated as capable of injecting into the air 9 gallons of water in 24 hours is shown in the accompanying illustration. In operation, the water is broken up mechanically into fine particles so that it forms a mist. The motor unit is rated as having a capacity of 70 watts and is of the universal current type. The motor is made to be completely protected within a housing and the bearings are sealed in a special grease so as to require oiling only once a year. Attached to the motor is a hollow cone shaped shaft which extends down in the water reservoir. When operating, this cone rotates at a speed of approximately 6,000 RPM drawing the water up the hollow cone to a rotating disc from which it is flung at great speed and force against stationary fins. This causes the formation of the fine mist. An electric fan located within the cabinet forces



The
SENSATION
of the OIL BURNER SHOW

OVERWHELMINGLY voted the outstanding feature of the Oil Burner Show at Philadelphia in QUALITY, VALUE and PERFORMANCE!

Write for details and you'll know why the BETTENDORF ECON-OMATIC is the pace-setter of the Industry for 1934.

A wonderful DEALER OPPORTUNITY—a great burner backed by a Powerful Help-The-Dealer-Sell Plan. With BETTENDORF ECON-OMATICS you can DOMINATE your market.

We urge PROMPT ACTION!!

Oil Burner Division, The MICRO CORPORATION, *A Subsidiary of the Bettendorf Company*, Bettendorf, Iowa.

TEAR OUT AND MAIL!

The MICRO CORPORATION, Bettendorf, Iowa., Dept. D-4.
Gentlemen: Without obligation, please send me complete details concerning the Bettendorf Econ-Omatic Franchise and your "Help-The-Dealer-Sell" Plan.

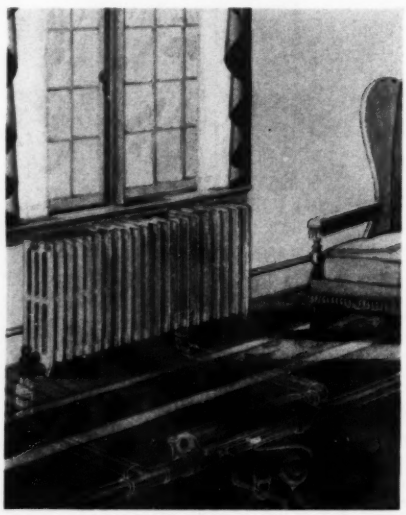
Name .....Address .....

City .....State .....

BETTENDORF
ECON-OMATIC OIL HEAT

the air drawn from the room through and past the humidifying chamber thus mixing the mist with the air and sending it out into the room. Three models are

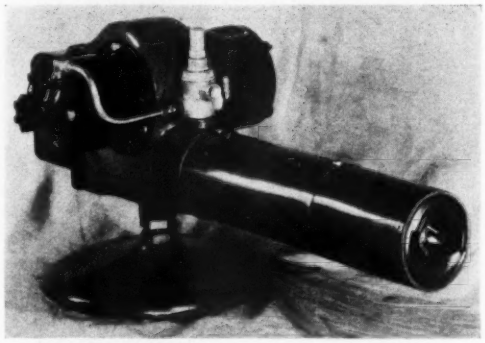
provided to meet the needs of a variety of homes and conditions. United American Bosch Corporation, of Springfield, Mass., is the manufacturer.



Air Moistener For Homes

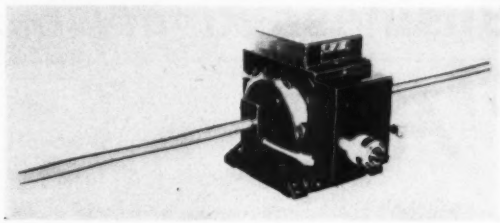
The humidifying equipment illustrated in the accompanying view is rated as capable of providing up to two gallons of water per day for each room in homes of up to 12 rooms. The vaporizing equipment is connected in the basement, as illustrated, to the steam pipe leading to the radiator which is most in use on the first floor. The humidifier is kept filled with water up to a fixed level by an automatic electric valve. This water is vaporized by the heat on its way to the radiator with the result that the quantity of vapor and heat produced

are coordinated. The idea is that the more artificial heat generated, the greater will be the amount of vapor needed and produced. The vapor rises through a copper dispenser flue, which is concealed behind the radiator. The air circulation caused by the radiator serves to pick up the moisture from the humidifier. Hitchings & Co. of Elizabeth, N. J., is the manufacturer.



New Oil Burner for Small Homes

Here is a smaller model of a line of oil burners which has been placed on the market just recently, for use in small homes. It is described as being fully automatic and as having a full-fitting multi-tongue flame. The finish of the burner is enamel. It has been placed on the market to complete a line of five burners. Harvey-Whipple, Inc., 57 Emery St., Springfield, Mass., is the maker.



Motor Equipped With Long Shaft

The motor illustrated here has been equipped with an extremely long shaft for operating multiple fan units in air conditioning apparatus. The motor is described as being of the low speed type with a fractional horsepower rating. Also it is described as being quiet in operation, adjustable and of the varying speed, single phase A. C. capacitator type with resilient mounting for the purpose of maintaining the shaft in a fixed position. The motor has wool packed bearings which are designed to require only infrequent lubrication and attention. The Holtzer-Cabot Electric Company, of Boston, Mass., is the designer and manufacturer.

BROWN & BROTHERS

Seamless Drawn

COPPER RANGE BOILER

•

Here's a range boiler being installed that is going to make a satisfied customer.

It's copper. That tells its own story. It's heavy copper, too, and tin-coated thoroughly on the inside.

There's no longitudinal seam. There are no separate "heads" to be riveted on. The only joint in the whole boiler is the circular one at the center where the seamless shells are telescoped together under hydraulic pressure. The joint has ample lap and is locked and thoroughly sweat and soldered.

The Brown & Brothers Boiler is so well designed and constructed that any customer for a range boiler, usually a layman on these matters, will see its greater value. He will want it and he will buy it.

E. B. BADGER & SONS CO.

75 PITTS STREET, BOSTON 271 MADISON AVENUE, NEW YORK, N. Y.

Last Winter's Snow and Ice Mean Big Business *Right Now*

"AUTOMATIC HEAT" is the most salable of home improvements this spring—while the picture of last winter's sufferings remain vividly in mind.

The home owner argues—"I'll never spend another winter like the last." But sometimes he delays his order. He thinks to himself—"Summer is almost here—perhaps I'd better wait till fall before buying my oil burner."

You have the answer to this—it is the Taco-Abbott automatic domestic hot water installation. He can have his oil burner installed this spring—then he can use it all summer to secure a steady, constant hot water supply—at the turn of the tap. Tell him that with Taco he can make his oil burner investment work twelve months of the year, not just seven or eight. The cost of hot water automatically secured this Taco-Abbott way—is just about the nearest thing to nothing that there is.

We Have a Special Advertising Campaign to Give You

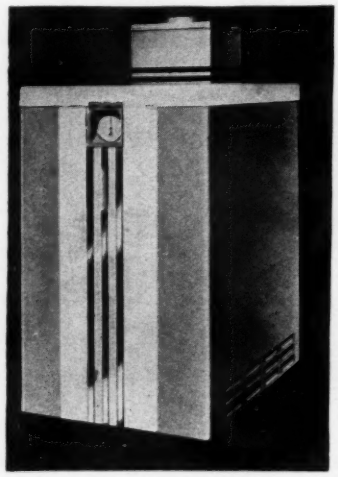
This vivid sales argument in complete advertising form for circularizing your prospects, etc., is yours for the asking including direct mail material, advertising cards, and a window display. Write at once for full information. Taco Heaters, Inc., 342 Madison Avenue, New York City. In Canada, Taco Heaters of Canada, Ltd., 24 Adelaide Street West, Toronto, Ont.

TACO-ABBOTT SYSTEM

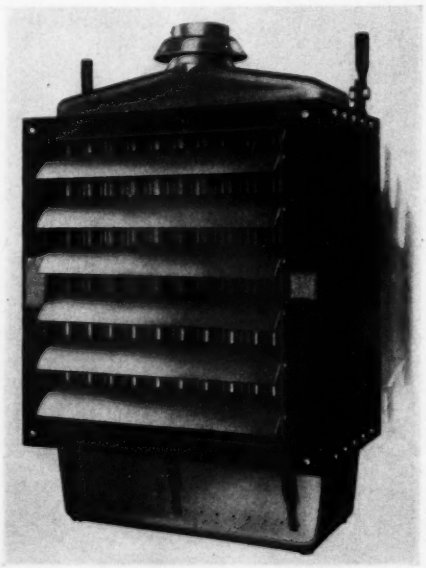
For Year-Round Automatic Domestic Hot Water Supply With Automatic Firing

Announce New Line of Gas Boilers

An announcement has just been made of a new line of gas burning units which consists of a coordinated burner, boiler and control all enclosed in a single jacket.



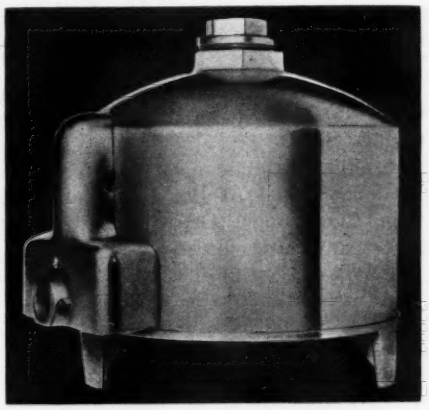
Various sizes of this equipment are available for residential, commercial and small industrial applications and also for the heating of large quantities of water. This gas fired equipment is designed to be interchangeable with the oil fired equipment manufactured by the same company as part of its air conditioning system. These units are manufactured by General Electric Company in their Cleveland plant.



Improvement of Gas Unit Heaters

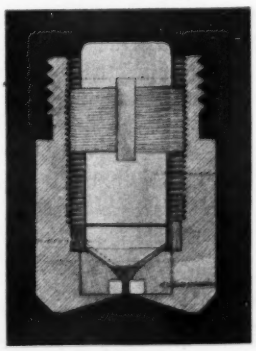
The accompanying illustration shows a front view of an improved gas unit heater. Adjustable outlet louvres

are shown. Some of the automatic safety features listed for this include the following: the gas shuts off when the fan stops and goes on again on resumption of current; the fan shuts off on failure of gas supply and will not start until the pilot is lighted again. The manufacturer is Buffalo Forge Company, of Buffalo, New York.



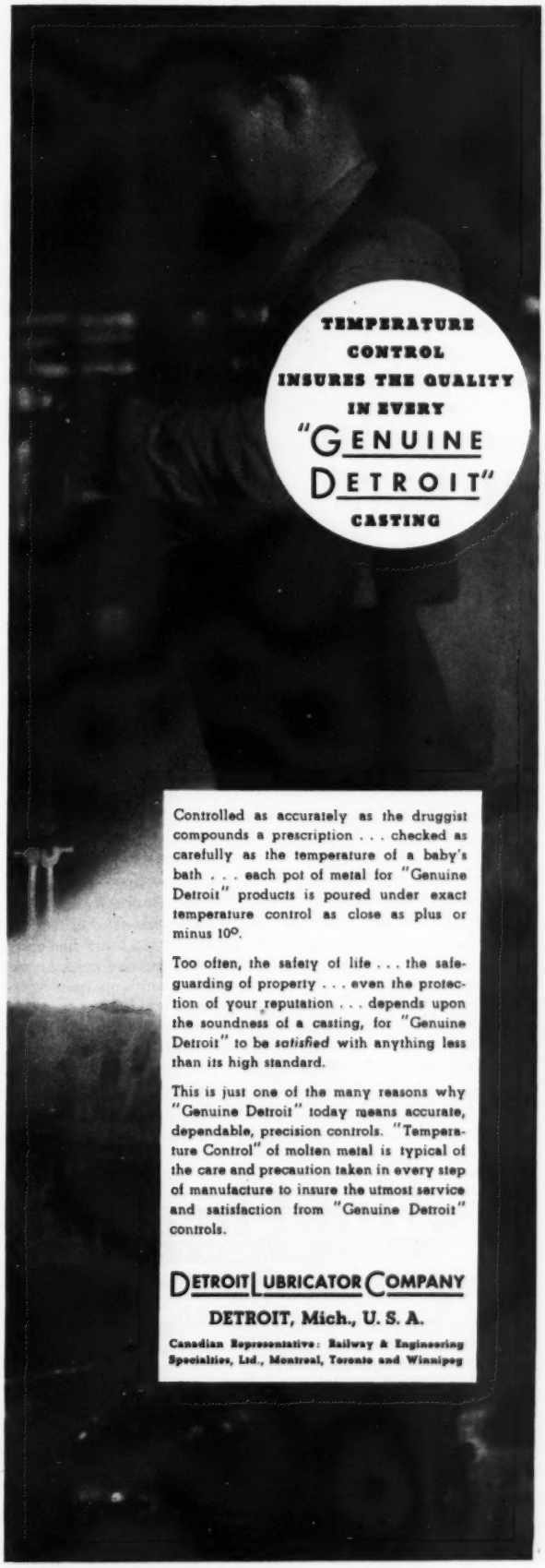
Preheater for Oil Burners

Here is a unit which has been placed on the market as an oil preheater which uses an electrical heating element. It contains what is described as a positive close-control which is operated by means of a special thermostatic switch enclosed in a cavity in the oil chamber. A radiating plate in the bottom of the unit presents a large radiating area to the oil for the purpose of preventing the formation of carbon deposits by overheating the oil. Bell & Gossett Company, of 3000 Wallace St., Chicago, Illinois, is the manufacturer.



Diamond Nozzle for Oil Burners

The accompanying illustration shows an enlarged cross section of an oil burner nozzle which has been placed on the market, using a diamond orifice. The orifice, being formed in a true diamond, is made to eliminate a change or breakdown in the diameter or contour of the orifice. The metal parts of the nozzle are made of an alloy described as being specifically designed to resist erosion and corrosion. Balloffet Diamond Wire Dies Co., Inc., 13 E. 22nd Street, New York City, is the manufacturer.


TEMPERATURE
CONTROL
INSURES THE QUALITY
IN EVERY
"GENUINE
DETROIT"
CASTING
Controlled as accurately as the druggist compounds a prescription . . . checked as carefully as the temperature of a baby's bath . . . each pot of metal for "Genuine Detroit" products is poured under exact temperature control as close as plus or minus 10°.
Too often, the safety of life . . . the safeguarding of property . . . even the protection of your reputation . . . depends upon the soundness of a casting, for "Genuine Detroit" to be satisfied with anything less than its high standard.
This is just one of the many reasons why "Genuine Detroit" today means accurate, dependable, precision controls. "Temperature Control" of molten metal is typical of the care and precaution taken in every step of manufacture to insure the utmost service and satisfaction from "Genuine Detroit" controls.
DETROIT LUBRICATOR COMPANY
DETROIT, Mich., U. S. A.
Canadian Representative: Railway & Engineering Specialties, Ltd., Montreal, Toronto and Winnipeg

Here's Mr. Curtis Steuart of L. P. Steuart & Bro., Washington, D. C., whose organization sold 879 oil burners during the past three years. The Steuart salesroom is shown below.

"We Get 75% of our leads from Enthusiastic Fluid Heat Users"

. . . says E. W. May, Sales Manager
L. P. STEUART & BRO.

"THAT'S HOW we piled up sales of 51 Oil Burners in two tough months like January and February"

ARE the customers for whom you have installed oil burners helping you make most of your sales? If not, mail the coupon. Learn why Fluid Heat dealers, like L. P. Steuart & Bro., Washington, D. C.—one of the leading dealers in the country—can thank enthusiastic customers for so many of their sales. January and February were the coldest months which Washington has experienced in more than a generation. And during those two freezing months the Steuart organization sold 51 oil burners. How? Ask Mr. E. W. May, Sales Manager.

Mr. May says: "A prospect may say 'Oh, Yeah!, when YOU tell him that your burner is more efficient, burns less oil, needs practically no servicing. But when the temperature gets down below zero and YOUR CUSTOMERS brag to their neighbors, friends and relatives about how perfectly their Fluid Heat Burners are performing, you just can't help making a lot of sales."

There's not room here to explain Fluid Heat's Rotary Wall Flame, Flameflex and other features which keep users' fuel costs and dealers' service costs amazingly low. There's not room to explain why Fluid Heat users actually get out and try to sell Fluid Heat Burners to all their neighbors, relatives and friends. Get all the facts. Mail the coupon. Learn why Fluid Heat will build your oil burner profits—NOW.

fluid heat
OIL BURNER
Conversion Units Oil Burning Boilers

MAIL THIS COUPON NOW

FLUID HEAT DIVISION
Anchor Post Fence Company
6804 Eastern Ave., Baltimore, Md.

I'm interested. Send me the facts about why we can make more money selling Fluid Heat.

Name .....

Company .....

Street Address ..... *City & State* .....

Cleveland Steel Products Corp. Appoints New Oil Burner Dealers

Cleveland Steel Products Corporation, manufacturers of oil burners at Cleveland, Ohio, has recently appointed the following distributors: Coleman-Halloran, Inc., Paterson, N J.; Lewis & Carnell Co., Philadelphia; Superior Heating Co., Chicago; Laramie Sales Co., Chicago; Hartley Bros., Philadelphia; A. W. Meyer, Ridgefield, N. J., and E. E. Johnson, Shelter Island, L. I., N. Y.

Placed in Charge of G. E. Gas Furnace Sales

H. B. Smith has been appointed in charge of gas furnace sales activities of the merchandising division of the Air Conditioning Department of the General Electric Company, with offices in New York City. Mr. Smith, who will work with district sales representatives, dealers and gas utilities in sales supervision and training, has had several years' experience in the promotion of gas heating, with the Consolidated Gas Company of New York, and with the Central Hudson Gas and Electric Company of Poughkeepsie, N. Y.

Campbell Machine Co. to Build Large Addition

The Campbell Machine Company of 2845 Harriet Avenue South, Minneapolis, Minn., manufacturers of oil burners, has started work on a two-story addition to its plant. The new building will be of concrete construction with a brick front. It will be 45x80 ft., providing more than 7,000 sq. ft. of additional floor space. It will house the company's general offices and a demonstration room for oil burners.

Appointed Distributor for Servel in New England Area

The Ballou, Johnson & Nichols Company of Providence, R. I., has been appointed by Servel Sales, Inc., as distributor for its line of commercial refrigeration and air conditioning equipment. This distributor will cover all of Rhode Island, eastern Connecticut and southern Massachusetts. Joseph A. Ballard, vice president and general manager, and Harry Tracy, sales manager, will be in charge of these activities.

Electrol Moves Factory from St. Louis to Clifton, N. J.

Electrol Incorporated, manufacturer of conversion oil burners, heating units and air conditioners, has moved its factory from St. Louis, Mo., to 934 Main Avenue, Clifton, N. J., a new factory building, located on a main arterial highway about midway between Passaic and Paterson, with easy access from the entire northern New Jersey area.

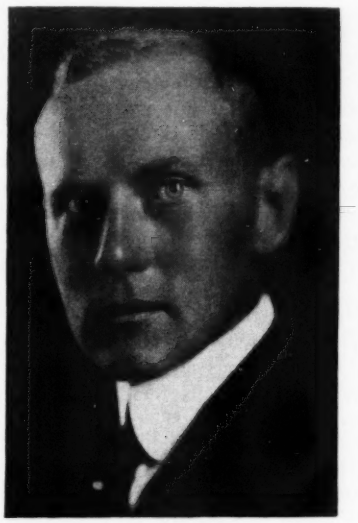
Together with the moving of the factory, some reorganization in personnel took place. Lionel Jacobs, long associated with Electrol Incorporated, has been placed in charge of the entire factory operation, and Electrol of New Jersey, Inc., Paterson, N. J., of which Mr. Jacobs was president, has been consolidated with

the Electrol factory branch formerly located at 472 Central Avenue, East Orange, N. J. These two offices are now located in the new show rooms of the factory at 934 Main Avenue, Clifton, N. J.

The New York office, which is principally a sales office, has been moved from 227 East 45th Street to 441 Lexington Avenue. This office operates exclusively through the plumbing and heating trade.

A. E. Allen Elected Vice President of Westinghouse Electric & Mfg. Co.

Arthur E. Allen was elected vice president of the Westinghouse Electric & Manufacturing Company of East Pittsburgh, Pa., at a recent meeting of the board of directors. Mr. Allen will be in charge of the Merchandising Division which is now established as a separate operation distinct from other divisions of the company. He will have charge of all sales, manufacturing and engineering activities of this new division. Mr. Allen has been with the Westinghouse Company since 1902. He was made general manager of the Westinghouse Lamp Company in 1925, and later vice president. D. S. Youngholm has been elected vice president of this company, succeeding Mr. Allen.



Arthur E. Allen

Appointed Sales Agents for Dail Steel Products Co.

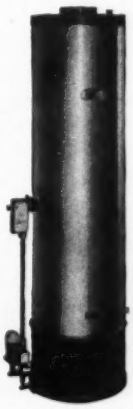
Dail Steel Products Company, manufacturers of heating and air conditioning equipment at Lansing, Mich., has just appointed the National Thermal Company, 185 Main Street, White Plains, N. Y., as its sales representative in the counties Westchester, Dutchess and Putnam in the state of New York, and in Fairfield County in Connecticut. The Dail Steel Products Company has also appointed A. J. Thayer of Thayer Engineering and Equipment Company, 163 Summer Street, Auburn, Maine, as sales representative in the state of Maine and in the counties of Strafford, Belknap, Carroll and Coos in New Hampshire.

The Lowest Operating Cost

Ever Achieved!

Burning low-price No. 1 fuel oil, MW Automatic Oil Burning Water Heaters offer the most amazingly economical standards of automatic hot water service known to the industry. Startling savings over gas, electricity, and even kerosene, are achieved in both domestic and commercial use—savings which run as high as 85% in many instances. In efficiency and faultless performance too, these units set new and higher standards. The pioneer manufacturer of this type of equipment, Motor Wheel Corporation has successfully developed every detail of design and construction to the point of perfection to place the MW line years ahead of the field. Installed anywhere in city or country, available in sizes and capacities for both domestic or commercial use, offering fully automatic service at a fraction of former fuel costs, these modern oil burning water heaters offer an unequaled opportunity for more spring sales and greater spring profits.

No wicks of any kind. No kerosene necessary—burns inexpensive fuel oil.



MW Water Heaters are listed as standard by the Underwriters' Laboratories.

MW Automatic Oil Burning Water Heater

MOTOR WHEEL CORP. DE-1
Heater Division Lansing, Michigan

Gentlemen: Please send me further information on MW Automatic Oil-Burning Water Heaters:

Firm Name _____

Address _____

MILWAUKEE
VALVE COMPANY PRODUCTS ARE
ENGINEERED
FROM
CONCEPTION
TO
COMPLETION

The outstanding features of every unit comprising the three complete "Milwaukee" lines . . . .

HEATING SPECIALTIES
"APPROVED" BRONZE VALVES
VALVES & FITTINGS
for the Oil Industry

. . . are the care and precision which characterize every step in the process of manufacture, from conception to completion.

Milwaukee Engineering is the standard of quality which

GUARANTEES
CONTINUOUS,
TROUBLE-FREE
SERVICE

with lower installation and maintenance costs.

Offices in 26 Principal Cities

MILWAUKEE VALVE COMPANY
MILWAUKEE WISCONSIN

The A. S. H. V. E. Guide for 1934 Is Off the Press

The A. S. H. V. E. GUIDE 1934 is just off the press and is ready for distribution. The Technical Data Section of this 12th edition has been enlarged to include newly developed data that are vitally important in meeting the present day demands of engineers who devote their time to heating, ventilating and air conditioning practice. From the practical experience of members as well as from available research sources useful facts have been gathered and incorporated in the 42 chapters which have been arranged for convenient reference. An extensive index has been included to aid the reader. The text is prepared for engineers, architects, contractors and students who are designing, operating, specifying, installing and studying systems and apparatus the functions of which are to create comfort and to improve the efficiency of processing.

All of the data in the previous edition have been reviewed, many chapters have been revised and amplified, while others have been completely replaced. The new chapters include the Cooling Load and Cooling Methods, Unit Conditioners, Radiant and Electric Heating, Humidifying and Dehumidifying Equipment, Steam Heating Systems and Piping. The tables of pipe sizes for steam systems have been presented in more compact and simplified form. Extensive changes will be noted in the chapters on Industrial Air Conditioning, Natural Ventilation, Central Fan Systems, Air Cleaning Equipment, Sound Control, Mechanical Furnace Systems, Radiators and Gravity Convectors, Heating Boilers, Pipe Insulation, Pipe, Fittings and Welding, Definitions and Terms. The remaining chapters were revised in order to bring them up to date.

Slight modifications were made in the chapters on Heat Transmission and Air Filtration based on a careful check of the experimental work which produced the basic figures. However, the method of application in practice has been slightly modified in this 1934 edition of THE GUIDE.

With 42 chapters and a comprehensive index to the text occupying 618 pages, THE GUIDE 1934 presents the largest technical data section ever compiled and published by the Society. Supplemented by the engineering data of 108 leading manufacturers in the Catalog Section, which consists of 176 pages, the user will find essential facts that are invaluable in laying out a plant or selecting equipment.

THE GUIDE 1934 was prepared under the direction of THE GUIDE Publication Committee consisting of W. L. Fleisher, chairman; D. S. Boyden, F. E. Giesecke, S. R. Lewis, Perry West and about fifty others cooperated in the preparation, reviewing and editing of the text.

Bound in a flexible red cover 6x9 in. in size, THE GUIDE 1934 contains 862 pages and 56 pages in the membership section. Single copies are $5.00 each, and checks or money orders should accompany the order. The publisher is American Society of Heating and Ventilating Engineers, 51 Madison Avenue, New York City.

ROBERT H. LUSCOMBE, formerly industrial gas engineer, in charge of heating and air conditioning for the Des Moines Gas Company, Des Moines, Iowa, has recently joined the sales organization of the Penn Electric Switch Company of Des Moines, Iowa.

Heating Contractors Will Convene in Atlantic City

The Heating, Piping and Air Conditioning Contractors National Association will hold its annual convention in Atlantic City, N. J., on May 22, 23, 24 and 25, with headquarters at the Ambassador Hotel.

In addition to reports of officers and committees, there is scheduled a number of important addresses on the National Recovery Program, the Construction Code and its administration, Air Conditioning, Merchandising and other subjects of vital interest to Heating, Piping and Air Conditioning Contractors.

In addition to the business sessions, which will be characterized by important reports of accomplishment by officers and committeemen and addresses by outstanding authorities on subjects of vital importance, the program which is being planned calls for a dinner dance, entertainment for the ladies, and recreation for all.

For those interested in swimming, there will be opportunities for swimming in the ocean and indoor swimming. In addition to all this, there is Atlantic City's miles of boardwalk, its beautiful beach, its atmosphere of fun and frolic for those who wish it or of quiet for those who want to rest.

A cordial invitation is extended to non-members of the Association to be present and attend all of the sessions of the convention.

Bethlehem Holds Big Dealer Meeting

During the oil burner convention in Philadelphia in March, the Bethlehem Foundry & Machine Co., Bethlehem, Pa., held a meeting of its dealers. This afforded an opportunity to display and describe the company's new boiler burner unit.

Eugene C. Clark, vice president and general manager of the company, was in charge of the meeting and was assisted by Paul S. Anderson, sales manager of the oil burner division; Willard G. Myers, advertising counsel, and by others of the engineering and sales staffs. Homer Addams, president of the Fitzgibbons Boiler Co., Inc., New York City, also spoke to tell of the boiler.

The company announced its sales plans, outlining both what part it would play and what was expected of its dealers. Mr. Anderson sketched the three factors essential for dealer success, merchandising ability, service and financial ability.

Charles V. Haynes—President, A. S. H. V. E.

Charles V. Haynes was elected president of the American Society of Heating and Ventilating Engineers at the 40th annual meeting, New York, Feb. 5, 1934, and was installed in office at the closing session of the meeting Feb. 8th.

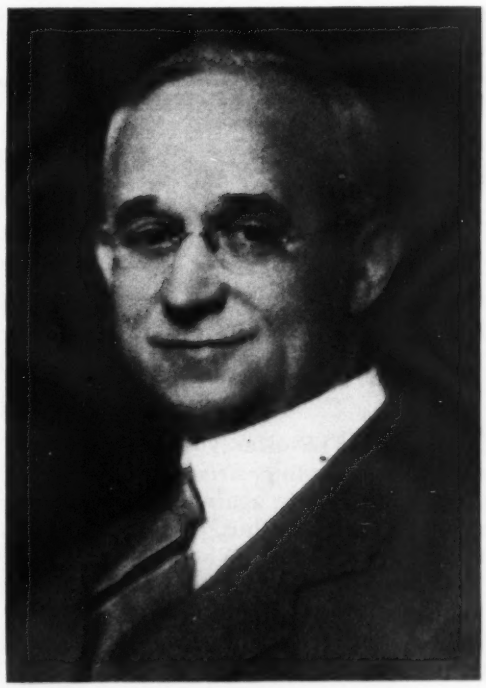
Mr. Haynes has spent the greater part of his life in the heating field and is known from coast to coast. His activity has spanned a 40-year period from time of his entrance into the heating and plumbing supply field at Albany, N. Y. His earliest adventure in the mechanical field came when he installed the first steam kiln for drying hops in the Empire state.

Following his service in the supply field, Mr. Haynes spent a number of years with the Wm. H. Page Boiler Co. and the American Radiator Co. before returning to the supply business in Philadelphia under the firm name of Haynes Thompson Co.; later he formed the heating specialty firm, the Haynes Selling Co., and in 1922 joined the Hoffman Specialty Co. and became vice president and general sales manager. During his many years in manufacturing and distributing boilers, radiator and steam heating equipment he has been interested in the development and improvement of these devices and has patented vapor and modulating valves.

Mr. Haynes was born at Middleburgh, N. Y. and as a young man taught school for several years before starting on a business career.

In addition to his enthusiasm for the Society his three outstanding hobbies are golfing, flying and farming.

Mr. Haynes was elected a member of the Society in 1917 and has served on some of its important committees. He was among the organizers of The Guide; has served as chairman of the committee on research, has been a member of the council for eight years and has held the offices of first and second vice president before becoming the chief executive of the Society.



Mr. Haynes is planning to visit all the chapters of the Society during his incumbency of the presidency to spur them on to greater efforts along the line of research and progress in heating and ventilating. His first visits of this kind have already been made—to Detroit and Chicago, where he attended meetings of the Michigan Chapter and the Illinois Chapter, respectively.

Your Heating Job Must be Worth a . . . GENERAL

Illustrated Above: GENERAL Indirect Water Heater No. 5-6-7-8.

Below: GENERAL Indirect Water Heater, U-Type.

Ask for Descriptive Literature on the GENERAL Fuel Oil Preheater.

● Whether for large installation or small, GENERAL Indirect Water Heaters are more than equal to the task. The GENERAL offers you an opportunity to sell your customers *low cost, year around, hot water satisfaction.*

Every heating job you install must be worth the best . . . it must be worth a GENERAL.

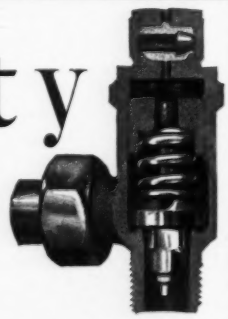
Incorporated in the GENERAL are numerous advantageous features which make for economical and dependable hot water supply and which every heating man will appreciate.

We are anxious to point out the remarkable advantages of the GENERAL and to tell you how you can share in GENERAL profits. Write today.

GENERAL FITTINGS CO.
100 BAKER ST. PROVIDENCE, R. I.

SELL
Safety

Prevent
- EXPLOSION
- COLLAPSE
- BURSTING

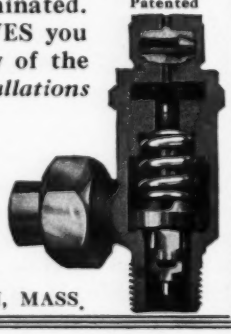


T-D VALVES offer you your one opportunity to *positively protect your customers* against these hazards of overheating, vacuum or excessive pressure. Where T-D VALVES are installed these dangers are entirely eliminated. When you sell T-D VALVES you sell *safety*. Partake now of the profits which *safety installations* provide.

● Learn the T-D VALVE story . . . write for complete details today.

Above: The No. 200 T-T-D Pressure and Temperature Valve. Patented

Below: The No. 300 – T-D Temperature, Pressure and Vacuum Valve. Patented



T-D SPECIALTY CORP.
300 Rutherford Ave., BOSTON, MASS.

Circular Describes Draft Adjusters

Preferred Utilities Manufacturing Corporation of New York City has issued a circular describing and illustrating its draft adjusters and its quick clamp ties. The circular also shows other products made by this company such as automatic dampers, foot valves, vent protectors, anti-syphon valves, double tapped bushings, and flush boxes.

Insulation—

(Continued from Page 73)

ings and insulating materials the increase in temperature range may offset any gain resulting from the use of the insulation.

Table 1 gives approximate attic temperatures to be expected for various values of U for the ceiling when the temperature outdoors is zero deg. Fahr.

Character of Building. In the examples discussed, the reduction in heat loss effected by insulation has been expressed in terms of the original heat loss through the uninsulated surface. It should be obvious that the insulation can affect only the surfaces insulated. In an actual building other heat losses occur, such as the loss through glass and air infiltration, that cannot be eliminated by merely insulating the walls and ceilings. The latter are the only parts adapted to such treatment. Hence, the total saving in fuel is represented by the relation that the saving through the use of insulation bears to the total original heat loss from the building, and not by the figure representing the proportional reduction in the loss through the insulated surfaces alone.

Table 1
Attic Temperatures for Outdoor Temperature of Zero Deg. F.

Value of U for Ceiling	Attic Temperature Deg. F.
0.525	35 to 40
0.240 to 0.197	25
0.170 to 0.131	20
0.111 to 0.070	15

The actual distribution of heat losses varies with the character of the building and standard of construction. As the result of a study of 200 houses, Mr. C. G. Segler (See Transactions of the American Society of Heating and Ventilating Engineers, Vol. 34, 1928, p. 473) derived the average values shown in Table 2.

If the insulated brick veneered wall which showed a heat transmission of 0.62 of the original, or a reduction of 38 per cent, and the insulated ceiling which showed a heat transmission of 0.41 of the original, or a reduction of 59 per cent, had been used in such an average house, it is evident that the total fuel saving could not have exceeded $(38 \times 27.0) + (59 \times 16.2) = 19.5$ per cent. With very poor original wall construction, and in certain types of houses and insulation, greater advantages may be obtained by insulating, but reasonable gains in the average case, for insulation of both walls and ceilings, appear to be of the order of from 15 to 30 per cent rather than 75 per cent as sometimes stated.

It is worthy of note that the combined loss due to air

infiltration and heat transmission through the glass is approximately 55 per cent. Hence, the installation of tight storm sash, which practically eliminates air infiltration and reduces the heat transmission through the glass to about one-half of the original amount, may be as effective in reducing fuel consumption as the insulation of both walls and ceilings.

Table 2
Average Distribution of Heat Losses in Residences

Source of Loss	Percentage of Total Loss
Walls	27.0
Ceilings and roofs	16.2
Glass and doors	30.1
Air infiltration	24.6

Wall Surface Temperatures. One distinct advantage that may be accredited to insulation is often lost sight of. The presence of cold walls increases the radiation loss from the body, and even if the temperature of the air in the room, as given by a thermometer, is 70 deg. Fahr. or above and ostensibly high enough for comfort, the occupant of such a room may feel uncomfortably cool. The effect of insulation is to increase the temperature of the inside surface of the exposed walls for a given outdoor temperature, as compared with the same conditions for an uninsulated wall. This may or may not be reflected as a fuel saving, but certainly adds to the degree of comfort experienced by the occupant, and in itself would be a justification for the use of insulation.

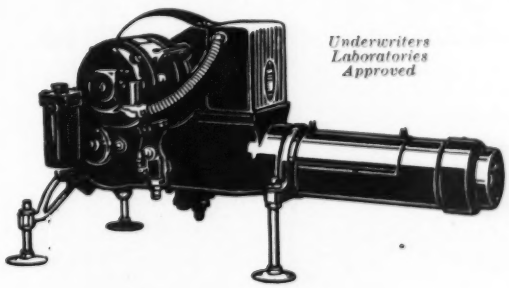
For a wall having an overall heat transmission coefficient, U, of approximately 0.25, with an indoor temperature of 72.5 deg. Fahr. and an outdoor temperature of 2.5 deg. Fahr. with a 10 mi. per hr. wind, the temperature of the inside surface of the wall was 55.0 deg. Fahr. These results were obtained by actual experiment. If this wall were now insulated so that the overall heat transmission coefficient were reduced to 0.10, a reasonable figure for a filled insulation, with all other conditions remaining the same, the temperature of the inside surface of the wall would be increased to approximately 67.5 deg. Fahr. This increase would undoubtedly add to the comfort experienced in the room.

Conclusion. Unquestionably the judicious use of insulation as an addition to the regular structural materials in a building accomplishes a saving in the cost of fuel required to heat the building, and probably increases the comfort of the occupants independent of the fuel cost. However, some misconception exists as to the magnitude of the savings in fuel cost actually attainable. Such savings are influenced by the character of the building, the original wall structure, the character and unit cost of the insulation, the thickness of insulation used, the climate, and the cost of fuel in the given locality. For this reason no generalization can be made and each insulation problem must be regarded as an individual one. Unless all of the factors are considered in their proper relations for each individual case, erroneous conclusions may be drawn and disappointing results obtained.

BRANFORD DEALERS FREED

from costly call-backs

That's the answer to any dealer's problem of making money in the oil burner business. Branford dealers cleaned up in 1933 and are now building 1934 sales on the Branford's amazing low service records. Dealers who had their choice of selling any burner are thoroughly satisfied with the Branford, a finely built burner rated second to none on the market. They emerge from the hardest kind of a winter with a full quota of pleased and comfortable customers.



Underwriters Laboratories Approved

The Branford is reasonably priced because of the unlimited manufacturing facilities of the maker — Malleable Iron Fittings Co., Branford, Conn. This organization has been a leader in the heating field for 70 years. You are assured of fair dealing and full cooperation, plus a guaranteed product.

New selling material for 1934 is now ready.
Write for full information.

MALLEABLE IRON FITTINGS CO.

Serving the Heating Industry for 70 years
THATCHER AVE. . . . . BRANFORD, CONN.

MOORE
AUTOMATIC
Temperature-Vacuum
RELIEF VALVE

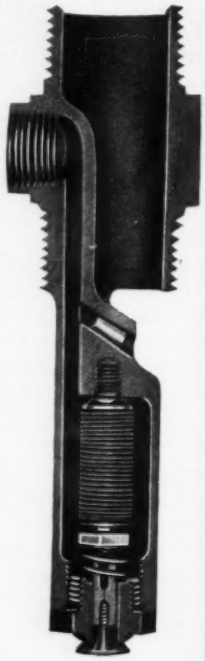
The Moore No. 25 valve will prevent an explosion of a domestic hot water tank caused by over-heated water and will also prevent a vacuum in the tank.

It is designed so that it may be screwed into the hot water tapping at the top of the tank. The hot water to the fixtures is then piped from the valve.

This is important as it places the valve in the hottest water without the necessity of a special tapping in the tank.

This valve will open and close automatically within 2 or 3° of its setting.

Mfgrs. of complete line of safety valves for Domestic Hot Water Tanks, also the Moore low input gas water heaters.



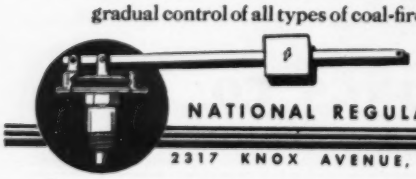
No. 25

J. W. MOORE VALVE CORP.
EVERETT MASS.

There are QUICK PROFITS
in Tank Heater Installations

Install the METAPHRAM H-3
REGULATOR FOR TANK HEATERS

A new regulator of real "National" quality and dependability at a low price in keeping with the job it is designed to handle. Ask for prices and hook-up diagram which insures absolutely automatic and gradual control of all types of coal-fired tank heaters.



NATIONAL REGULATOR CO.
2317 KNOX AVENUE, CHICAGO

Sales Helps—

Fuel Evaporation Cost Charts

Lammert & Mann Company of Chicago has just issued a series of three charts giving the evaporation costs of coal, fuel oil and gas, respectively. The figures in these charts are simply computations. The user selects the evaporation rate of his plant, and uses that figure and the cost of his fuel to find his evaporation cost.

Booklets on Air Conditioning

General Electric Company of Schenectady, N. Y., has recently issued the following booklets: "Summer Cooling and Year 'Round Air Conditioning for Profit and Comfort," "Air Conditioning for Winter and Summer from Central Plant or Single Room Unit," "Air Conditioning Safeguards Assets," and "Air Conditioning Your Office."

Boiler Reference Book Just Issued

"Boiler Reference Book" is the title of a 400-page book which has just been published for those who require such information as boiler numbers, grate area, heating surface and manufacturer rating. It is offered to oil burner, stoker, gas burner salesmen, architects and engineers; boiler, building, insurance, industrial inspectors and the heating trade as a quick and ready reference for determining the ratings of boilers. All information given in this book is published as furnished by the manufacturers. The products of 35 manufacturers are listed. The book is published by John S. Swift Co., 328 Jefferson Street, Chicago, and its price is $1, bound in paper cover.

A Treatise on Stainless and Heat Resisting Alloy Steels

American Sheet and Tin Plate Company of Pittsburgh, Pa., a subsidiary of the United States Steel Corporation, has just published a treatise on stainless and heat resisting alloy steels, consisting of 36 pages, 8½x11 in. The treatise is divided into five chapters as follows: I. A Corrosion Resistant Steel for the Widest Range of Applications.—II. A Corrosion Resistant Steel for General Requirements.—III. Corrosion Resistant Steels for Machined Parts, Forgings, and Special Applications.—IV. A Corrosion Resistant and Heat Resistant Steel Used Primarily for Highest Temperature Service.—V. An Outstanding Development in Heat Resistant Alloys.—The more important constituents of these alloy steels are chromium, nickel and carbon, and some of its typical applications are cafeteria and hotel equipment, plumbing accessories, such as sinks, troughs, trimmings; refrigerator hardware and trim, fans and tanks.

A. L. RUBEL, sales engineer for the Penn Electric Switch Co. of Des Moines, Iowa, has been placed in charge of this company's new field office, which will be located at 839 Beacon Street, Boston, Mass. Mr. Rubel will cover New England and adjacent territory.

Nu-Way Corporation Holds Annual Meeting

Nu-Way Corporation of Rock Island, Ill., manufacturer of automatic oil burners, held its annual meeting recently and elected the following officers for the ensuing year: President, J. G. Huntoon; vice president, F. C. Vetter; secretary, B. C. Connelly; and treasurer and assistant secretary, O. K. Gipple.

Air—

(Continued from Page 86)

The solution of the problems with which those industries had to contend was not accomplished by accident, nor by guesswork, but by careful scientific investigation of the underlying causes of the difficulties encountered and accurate determinations of the relation of temperature and humidity, to proper operating results.

There is a distinction between simple ventilation and air conditioning, in that the former provides primarily for a change of air and presupposes the need for a relatively large volume of air as an essential to human health, with temperature and humidity relegated to a position of secondary importance. Air conditioning on the other hand considers a proper temperature and humidity of infinitely greater importance than air volume.

In other words, ventilation implies air quantity, but not necessarily air quality; while air conditioning implies proper quality, rather than a given quantity.

There is an almost universal belief that it is necessary to introduce a large volume of air into buildings occupied by human beings in order to maintain healthful conditions. In fact, the laws of most states require the introduction of eighteen hundred cubic feet of air per hour for each person in schoolhouses and public buildings. Until recent times there seemed to have been ample evidence to support this theory, and the tragedy of the Black Hole of Calcutta was constantly referred to in support of it.

Briefly, the story of that tragedy is that when Fort William in Calcutta was captured by the natives in 1756 the Europeans who were taken captive were driven at the point of the sword into the guard room which was scarcely twenty feet square and with but two small windows, strongly barred with iron. Into this room on a sultry night, one hundred forty-six men were jammed. At six the next morning, an order arrived for their release, but only twenty three of the original one hundred forty-six were still alive, the rest having died a horrible and delirious death.

Scientific investigations carried on during the past twenty five years both here and abroad have demonstrated beyond the shadow of a doubt that deaths under such conditions are *not* caused by poisoned air, but by temperature and humidity so high as to be beyond the capacity of human organism to cope with.

We know now that had it been possible to air condition that enclosure, that is, to hold the temperature and humidity within a proper range and to slightly stir up the air, even though the other conditions remained the same, the one hundred forty-six men would all have emerged alive.

There is no doubt that proper air conditioning con-

Home owners will buy money saving equipment

EXCELSO

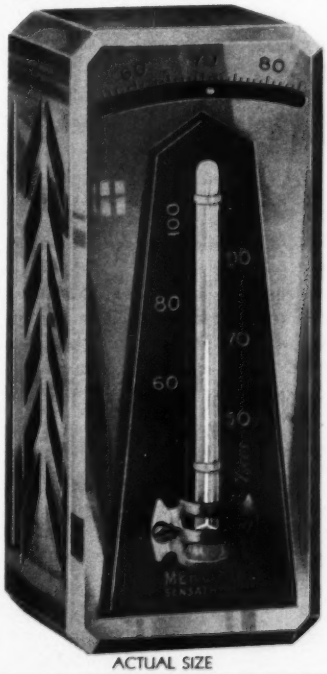
QUALITY WATER HEATERS

SOON PAY FOR THEMSELVES

Sell them now!

EXCELSO PRODUCTS CORP.
57 Clyde Avenue Buffalo, N. Y.
or
Ask Your Jobber

MERCOID SENSATHERM



ACTUAL SIZE

Leading Thermostat In The Automatic Heating Field

Operates on a total differential of 1 degree (plus or minus ½ degree)

Unique in construction and design. A new type of mercury switch used. There can be no open arcing, pitting or corrosion. The contacting surfaces are kept permanently clean.

The instrument is small in size and unusually neat in appearance.

Write for Bulletin No. 100

Mercoid Controls Are Also Distributed and Stocked In Many Cities By the Graybar Electric Co., Inc.

THE MERCOID CORPORATION
Sole Manufacturers of The Mercoid Switch
4217 Belmont Avenue
Chicago, Illinois

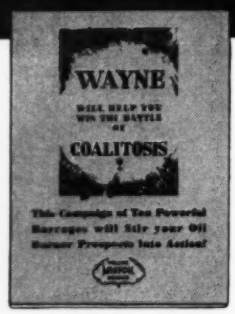
WELL DONE I SAY, WELL DONE!
FAWNCY SUCH A WELL DESIGNED STEM!
GOOD HEAVY NECK, EH WOT?
NO WONDER O.B. RATES TOP HOLE!
NICE CLEAN CUT THREADS EH, WATSON!
I DON'T NEED A MAGNIFYING GLASS TO SEE THAT THAT MARK MEANS QUALITY!
B
GOOD LOOKING REALLY!

The Ohio Brass Company
Mansfield ,,,, Ohio

HAVE YOU SEEN WAYNE'S COALITOSIS CAMPAIGN ?

WAYNE MISTOIL BURNER

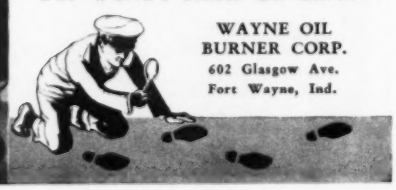
The Most Powerful Advertising and Selling Plan Ever Offered to Oil Burner Dealers



COALITOSIS is clicking! Wayne dealers who have seen this high powered combination of advertising and sales strategy hail it as the most unique and effective plan ever developed in the oil burner field. It's designed to help you make sales on the first and second call. It shocks your buyers into action. Find out about it now.

WAYNE

The World's Finest Oil Burner



WAYNE OIL BURNER CORP.
602 Glasgow Ave.
Fort Wayne, Ind.

tributes not only to human comfort but to human health and the field of air conditioning is so large, and its possibilities so great, that it may prove to be the wheelhorse that will pull us out of this depression.

As everyone knows, theaters have gone into it in a large way, because it provides comfort that the public is willing to pay for, and the box office receipts are accordingly increased. Department stores have taken it up, as well as hotels and restaurants, and the railroads are vying with each other in extending its use throughout their lines in hard-headed appreciation of its favorable effect on their income.

AIR CONDITIONING ENTERS THE HOME

And finally it has entered the home. The air conditioning unit is now on the threshold of an era that will see it change from a luxury to a household necessity and it is my prediction that certainly within ten years and possibly within five, the home that lacks some form of air conditioning will be as rare as the home that is now without an electric refrigerator or a radio.

I do not mean necessarily that the entire home will be air conditioned, although this is entirely feasible for those who have the means to enjoy such comforts, but in most of the homes there will be one room, or two, so equipped as to provide a haven of refuge from the heat of the day and even more than that, it will prove to have beneficial effects in connection with certain physical ailments.

AIR CONDITIONING IS DEFINED AS COVERING FOUR CONDITIONS

Studies carried on at the University of Kentucky seem to indicate that it has definite possibilities in providing relief for sufferers from hay fever. The possibilities in that direction will of course have to be finally determined by the medical profession and you will be wise to be governed by their advice in matters of that kind rather than by the opinions of an engineer or a manufacturer.

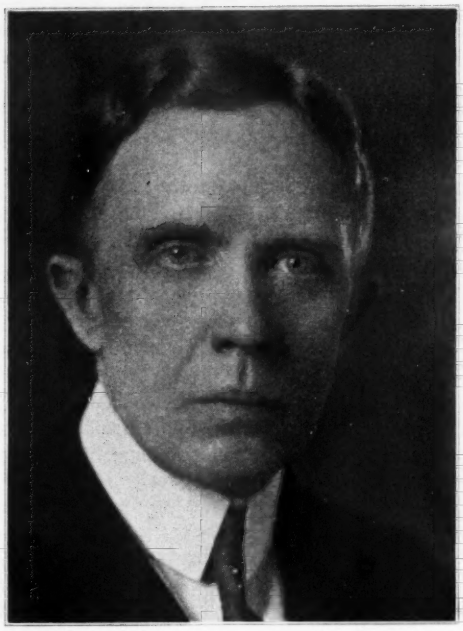
Air conditioning may be defined as the simultaneous control of the temperature, humidity, air motion and air distribution within an enclosure.

The ordinary Fahrenheit thermometer registers temperature only, or what we call the dry bulb temperature.

The engineer, however, speaks in terms of effective temperature, which is a composite index, combining the readings of temperature, humidity and air motion in a single value, because these three conditions enter into the feeling of comfort.

The dry bulb temperature may be above seventy and because the humidity is too low or because there are excessive air movements within the room the conditions within that room may not be comfortable.

On the contrary, the dry bulb temperatures may be considerably below seventy and yet if the relative humidity is high enough, and the air movement no greater than twenty to twenty-five feet per minute, the room may be entirely comfortable; and so in the design of air conditioning equipment for use in the summer time practically all of these things have to be taken into consideration.



Arthur C. Williard

Professor A. C. Willard Elected President of University of Illinois

Arthur C. Willard, acting dean of the College of Engineering, has been elected president of the University of Illinois at Urbana, Ill., to succeed Dean Arthur Daniels, who has served as acting president since the resignation of President Harry Woodburn Chase, which occurred last summer. Professor Willard will take office July 1.

President-elect Willard was born in Washington, D. C., and after receiving his preparatory education in the public schools of the District of Columbia, attended Massachusetts Institute of Technology and was graduated in 1904. He commenced his teaching career immediately in California and in 1906 became assistant professor of mechanical engineering at George Washington University. From 1909 to 1913 he served the Government as sanitary and heating engineer, in the office of the Chief Quartermaster of the Army. Since 1913, President-elect Willard has been a member of the faculty of the University of Illinois, first as assistant professor of Heating and Ventilation, and then as professor in charge of the Department of Mechanical Engineering. Last fall he assumed the duties of acting dean of the College of Engineering. He is an internationally known authority in the field of heating and ventilation. He has served as consultant on ventilation for the Holland vehicular tunnel under the Hudson river and for the chemical war service. He is a member and past president of the American Society of Heating and Ventilating Engineers. He has written many articles and pamphlets on heating and ventilation. With L. A. Harding he is the author of "Heating and Ventilation" and "Power Plants and Refrigeration."

In the American Society of Heating and Ventilating Engineers he has served on many of the technical committees, including the Guide Publication Committee, the Committee on Ventilation Standards, the Committee on Code of Minimum Requirements for the Heating and Ventilation of Buildings, and he has held the offices of president, first vice president and second vice president. For a number of years he was a member of the council and was chairman of the Executive Publication Program Committee, and he was for several years a member of the Committee on Research. Since 1931 he has been technical adviser for Research.

Changes Name to Gar Wood Industries

The Wood Hydraulic Hoist & Body Co., Detroit, has changed its name to Gar Wood Industries, Inc. The name Wood Hydraulic Hoist & Body Co. has been used for 22 years. The change in name, effective March 1, was made to cover the company's expansion from a one-product company to a parent organization with several divisions. Gar Wood is president of this organization.

C. E. Campbell Joins Micro Corporation

C. E. Campbell, formerly president and general manager of the Nu-Way Corporation at Rock Island, Ill., has just joined the Micro Corporation, subsidiary of the Bettendorf Manufacturing Co. of Bettendorf, Iowa.

The Name Is Now Marsden & Wasserman, Inc.

The name of the oil burner supply business of the F. Grey Libbey Company of 44 Hicks Street, Hartford, Conn., has been changed to that of Marsden & Wasserman, Inc. The management and the personnel remain the same as before, as follows: President, Edward C. Marsden; secretary-treasurer, A. L. Wasserman.

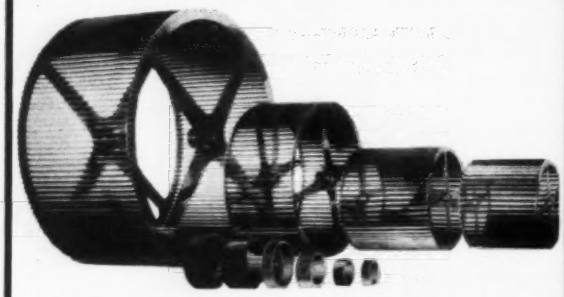
Will Make Instruments for Heating and Cooling Field

The Wilbin Instrument Corporation is the name of a new company which has just started in business at 40 East Thirty-fourth Street, New York City. The company plans to manufacture and market a line of electric instruments for the control of temperature, humidity, pressure, vacuum and liquid levels as used in heating, air conditioning, refrigeration, and in process industries.

The officers of the new company are: President, Gus A. Binz; vice president, Clement Wells; director and chief engineer, E. A. Ileman.

Mr. Wells is president of Sarco Co., Inc., manufacturers of heating specialties. Mr. Binz has been sales promotion manager of Sarco Co. for the last four years and will continue his association with that company in an advisory capacity. Before coming to Sarco Co. he was for nine years general sales manager of the American Schaeffer & Budenberg Corp. and its successors. Mr. Ileman is a research engineer who has specialized in the development of industrial instruments for the last twenty years.

Multi-Blade Blower Wheels
All Types and Dimensions



Lighter • Stronger • Dynamically Balanced

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DESIGNED AND BUILT BY
THE WORLD'S LARGEST FAN MANUFACTURER

SCHWITZER-CUMMINS CO.
INDIANAPOLIS, U. S. A.

• *Call on us*
to solve your Fan and Blower Problems

HOFFMAN

now offers the **MOST COMPLETE LINE** *of* **STEAM HEATING SPECIALTIES**

VALVES
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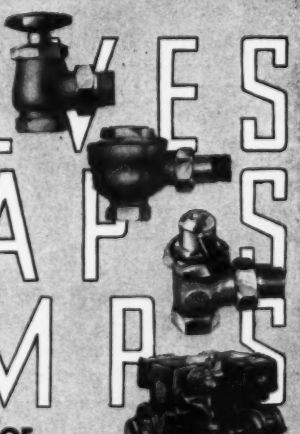


FOR EVERY TYPE OF STEAM HEATING SYSTEM

For full information See Your Wholesaler or write to
Hoffman Specialty Co., Inc., Waterbury, Conn.

Oil Burner Code—

(Continued from Page 82)

commercial practicability through the use of manuals and procedures painstakingly developed by the accounting firm.

This system is now in the hands of the offices of the Administrator of the National Recovery Act for approval and as of this writing all major differences of opinion between Government officials, members of the Code Authority and the accounting firm have been ironed out. It is believed that this plan will be available to the industry during the current month.

Contrary to the general belief, the degree of simplicity which it has been possible to build into this plan is such that those concerns who now have reasonably adequate accounting systems will be able to apply their present systems in such a manner as to make the proper tests in costs and pricing, with but slight inconvience or change in the regular procedures. For those who have not had adequate cost accounting facilities of any standard description, both among manufacturer and dealer organizations, the plan will offer, at nominal cost, the facility of such a system. The manuals prepared by the accounting firm and scheduled for distribution by the Code Authority immediately following approval of the plan by the Administrator, will carry the necessary working information to the members of the industry providing fully such instruction and advices as will be necessary to make the plan effective. Thereafter no member of the industry shall sell or exchange any product of the industry at a price below his own individual cost. The cost will include what is considered by the members of the industry, the accountants and the government representatives a fair allowance for overhead expenditures; and the matter of checking the costs of any product of any company upon question being raised by any party at interest can be done readily through the application of the cost procedure to the figures of record of the individual company in question.

In the third division as to what has been done so far —first—employment has been increased. At the time of our public hearing, we estimated that over 10,000 men would be employed as a result of operations under the Code, over and above those that would have been employed in the industry had the NRA program not become effective. While this is an extremely difficult matter to estimate due to the large percentage of the employees being located in the retail outlets of great geographical spread, there are no data of record as yet that warrant a change in the size of this figure—with the possible exception that some reduction may apply with respect to the increased number of service men in the industry due to the difficulty of dividing the work of the industry's service men with those not experienced in such activity—which, in turn, is due to the highly special training and educational qualifications required of the industry's service men; and which can be acquired only over a considerable period of time.

Second, the wage scales that have been established are at a level of from 10 per cent to 20 per cent higher than the hourly wages applying in some other industries and were set voluntarily by our industry at figures which

have been from the first satisfactory to the manufacturers, the dealers, the representatives of labor officiating at the public hearing, the representatives of the consuming public and the Federal Government; the key characteristic in this situation being that the oil burner industry has maintained from the first uniformly fair scales of wage rates.

Third, reduction in hours has been made effective following in parallel with the procedures by means of which the wage rates were put into effect.

Fourth, the improvements in standards of labor have been universally forthcoming in our industry with a minimum of friction or disturbance on the part of anyone concerned.

ACT FOR 20,000 OUTLETS

Fifth, checking on the matter of the extent to which unfair trade practices have been eliminated, it should be borne in mind that the activities of trade in this industry are carried on through nearly 20,000 outlets located at practicaly all points in the United States. The length of time during which this activity has been under way covers five months, beginning during the peak season of the industry. In accordance with the provisions of the Code and after starting from the zero point in October with no organization either at the general headquarters or any of the points of decentralization throughout the country, the Code Authority and its auxiliary force of Area Governors has put into effect such activities pertaining to the industry's consciousness and efforts with respect to trade practices as to affect directly and favorably many cases of improper and misleading advertising, breaches. of contracts, piracy of styles, defamation of competitors, secret rebates, special services and discounts, commercial bribery, gratuities, undue trade-in allowances, unduly liberal terms of payment, improper forms of contracts, and in fact all of the various revisions of trade practices intended to be covered under this provision of the Code. The total number of these cases of importance that have been reported to the Code Authority and acted upon by the Code Authority amounts to approximately 400, encountered at various points running into a country-wide spread. Out of these 400 violations, over 200 of them definitely have been closed and the practice discontinued. A small number of cases, subject to exemption, have been adjusted. The matter of interpretation in regard to labor, prices, levies, etc., has resulted in disposition of approximately 150 of the cases, there being as of this writing violations that are still pending and under investigation by the Code Authority amounting to less than 20.

This work of carrying through with respect to trade practices has been promoted extensively through the important meetings of the Dealer Division of the American Oil Burner Association—in which some 150 district Association meetings have been held covering programs of educational and instructive nature and with the industry members in attendance ranging all the way from a dozen to 500 or 600.

Outstanding also in the development of this work has been the matter of the strengthening and further organization of local oil burner associations. The number of

CASH-ACME IT'S AUTOMATIC

Dependable Diaphragm Type Relief Valves For Water and Air

Cash Acme has developed a relief valve seat that makes "sticking" as out of date as silk shirts.

You can depend on this valve to protect range boilers, water heaters or heating systems against excessive pressures.

Wherever water is heated this protection is needed. Write for heating specialty bulletin D1 showing the entire Cash Acme Line of valve specialties. Or order from your jobber.

Type FH Relief Valve
Sizes ½" - ¾" - 1"
Pressures to 150 lbs.

A. W. Cash Valve Mfg. Corp'n.
600 NORTH WATER STREET
DECATUR, ILLINOIS

Dealers Wanted for FREDERICK STOKERS

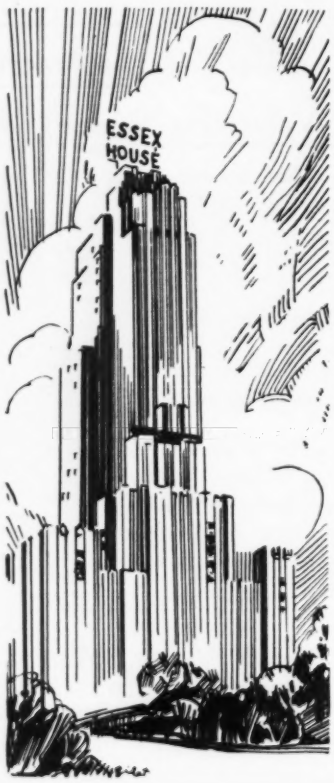
AN OPPORTUNITY to handle a Reliable, Efficient line of Underfeed Stokers made by an old, dependable Stoker Manufacturer awaits WIDE-AWAKE DEALERS in various sections of the country.

FREDERICK STOKERS give the Dealer unlimited sales possibilities in Homes, Apartments, Office Buildings, Schools, Institutions, Hospitals, Greenhouses, Laundries, Bakeries, etc., etc. In fact, wherever coal can be used for Heating, Processing or Moderate Power Requirements.

AND REMEMBER, Frederick Stokers are available for either Bituminous or Anthracite Coals—A DECIDED SALES ADVANTAGE FOR DEALERS.

Write for Interesting Dealers Proposition

THE FREDERICK IRON & STEEL CO.
Department S-D
FREDERICK - - - MARYLAND



A PRODUCT OF YOUR GENIUS AND ENGINEERING SKILL STANDS READY TO SERVE YOU AT

ESSEX HOUSE

160 Central Park South
New York City

When those humid, sweltering days of summer come upon us, remember that the Teakwood Dining Room, Persian Coffee Shop and Cafe Essex are completely air-conditioned. Then, too, there are extra large rooms and suites. Essex House is a forty-story, ultra modern hotel, overlooking the 840 beautiful acres of Central Park.

these associations in existence in the United States has been increased in connection with this activity from some 24 six months ago until now there are over 40 of these; and, in addition, the organization of Area Governors—carefully selected because of their reputation and fitness for the position—act as contacts between the oil burner Code Authority and the industry in their respective areas. These area governors are operating in 49 districts; there being a total of 240 area governors—so that now there are over 90 territories in which area governor groups and trade associations are representing the Code Authority direct.

PRICES AT RECOVERY LEVEL

Leading into the fourth division of this discussion bearing on those things provided for to be actively undertaken and accomplished in the future, we center our attention on the cost accounting system, for the reason that through that and that alone, under this present government edict, can we regulate the matter of pricing to a point at a level not lower than cost. The necessity for a regulatory plan designed to hold prices at a cost recovery level is peculiarly great in this industry, due in part to the very large number of units in the industry—many of which are not versed on their actual cost and due in part to periodical and temporary financial stringencies that tend toward distress methods of selling and due to some extent also in times past to subsidies of oil burner divisions in large corporations to serve special internal interests of those corporations. There are in addition to these, other reasons that have to do with the general run of periodical and irregular price reductions following the more or less usual trends. An experience little short of a phenomenon has developed in this industry since the establishment of NRA nearly nine months ago, in that, whereas as a result of the mere existence of these codes of fair competition, prices in many lines have gone up to unreasonable heights—sufficient, in fact, to give the Government some concern; in our industry no such development has taken place—the psychology of the industry having seemed to run toward a reduction of prices toward the lower limits without regard for the welfare of the operator, in many instances selling at prices that do not return costs to say nothing of making a reasonable profit. Some of this tendency has come about as a result of putting the Code into operation during the peak season, whereupon members of the industry began the filing of prices without a full understanding of the significance of such price filing. Another cause is found in the fact that the seasonal slump that begins in late October every year was more pronounced in this industry this year than usual; and still another tendency toward low pricing is to be found in the fact that the so-called dull season of the industry came upon us simultaneously with our operations under the Code. Prices during such seasons have always drifted toward the lower levels, manifesting themselves through special selling campaigns with various types of dull season inducements put forth, many of which are not permissible under the Code.

An additional reason of considerable import is that which has to do with the fact that the long drawn out period of the depression has exerted a weakening effect upon many members of all industries and with the newer

oil burner industry there are naturally many units which have suffered severely in this respect, and therefore, naturally with the approach of the duller seasons, have put forth goods in many cases on a distress price basis.

Regardless of what the reasons may be for this downward trend of prices since undertaking operations under the Code, there are two points outstanding in importance; First, the downward trend has not been as great as has been generally supposed, and second, there is a small number of operators cutting prices. The range burner manufacturing members, the power burner manufacturing members and a good cross sectional group of power burner dealers show the following interesting price changes:

Average prices reported from 47 range burner manufacturers, totalling over 75 per cent of the business done by the industry, reporting on their one most popular model only, showed a weighted average of $15.06 as of July 1, 1933 and $14.44 as of February 1, 1934, showing a decrease of $0.62 in February 1934 over July 1933, or 4.11 per cent. The straight average of this same group amounted to $16.03 in July 1933 and $15.22 in February 1934, showing a decrease of $0.81 in February 1934 over July 1933, or 5.05 per cent. Average prices reported from 74 power burner manufacturers, totalling over 80 per cent of the business done in this division of the industry, reporting on their one most popular model only, showed a weighted average of $141.53 as of July 1, 1933 and $138.97 as of February 1, 1934, a decrease of $2.56 in February over July, or 1.81 per cent. The straight average of this same group amounted to $128.72 in July, 1933 and $131.04 in February 1934, showing an increase of $2.32 in February 1934 over July 1933, or 1.77 per cent. Average prices reported by a representative group of 151 distributors, dealers and branch offices in the power burner division showed an average price of $340.63 as of July 1, 1933 and $334.31 as of February 1, 1934, a decrease in February over July of $6.32, or 1.85 per cent.

SOME BELOW COST SALES

An outstanding fact brought forth by these figures is that the averages shown here are well above the cost recovery prices as far as the manufacturers are concerned and indications are that the straight average selling prices of the dealers are above cost recovery levels. The fact remains, however, in the face of this situation, that we have yet a number of cases of selling at levels below cost. The remedy for this situation lies now entirely within the operation of the cost accounting system and is entirely hinged upon that facility, which will be pressed into service immediately upon its becoming available, whereupon we have every reason to believe that such aggravating cases in the industry as represent sales below cost will be forthwith corrected.

Formerly industries were operating with respect to certain laws, Federal, State, Municipal and District—also ordinances and other regulations. Since last June industry has been put largely into a right-about face position with respect to the Government laws. Trade associations and code authorities have been developed in a manner designed to act partially as Government agents and partially as representatives of industry in an intermediary fashion.

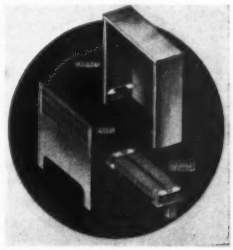
AIR CONDITIONING
CONTROLS
for
Domestic or
Commercial
Installations

MINNEAPOLIS-HONEYWELL Air Conditioning Controls govern all phases of this work, including heating, cooling, ventilating, humidifying or dehumidifying. There are controls for every application, each designed to accomplish its particular function with characteristic Minneapolis-Honeywell accuracy and efficiency. Minneapolis-Honeywell Regulator Company, 2801 Fourth Avenue South, Minneapolis, Minn. Branch and distributing offices in all principal cities.

Humidity Control. Very accurate, with exceptionally small differential. Range 20 to 80 per cent relative humidity . . .

MINNEAPOLIS-HONEYWELL
Control Systems

Only CONVECTOFIN Gives Certified Performance



In addition to reducing installation costs by savings in material, in handling, and time, COVECTOFIN assures absolute heating results. Takes the place of radiators: used with your favorite boiler.

Write for literature. No obligation.

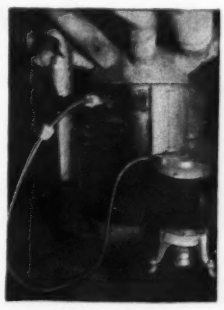
CONVECTOFIN
The BUILT-IN HEATER

With Certified Performance, CONVECTOFIN assures 100% heating results. 15 pieces less to handle and make up.

Commodore Heaters Corp.
11 W. 42nd St. New York

KENT

Cleaning Profits In Every Basement

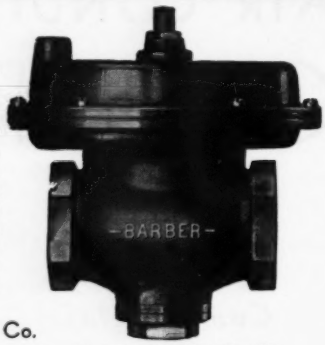


In every basement in your community there is a worthwhile profit awaiting you. The Kent Suction Cleaner provides you with the surest means by which you can secure this business. Get your just share of this heater cleaning business *now*. Get it with the Kent Suction Cleaner. Write today for further information and put yourself in line for these extra profits.

The KENT COMPANY, INC., 158 Canal St., Rome, N.Y.

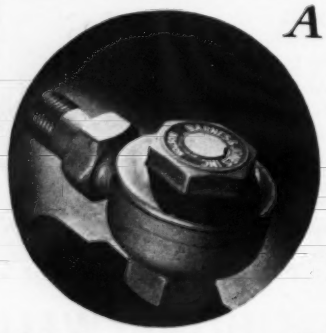
SAVE
on gas bills!

That's what everyone of your customers is trying to do—get gas bills down as low as possible. With a BARBER Gas Pressure Regulator on any gas appliance, gas bills will be much lower. Show one to your customers, take the orders and the profit. Write for details.



The Barber Gas Burner Co.
3702-4 Superior Avenue
CLEVELAND - - - - - OHIO

Made in ¼", ⅜", ½", ¾", 1", 1¼", 1½" and 2" sizes



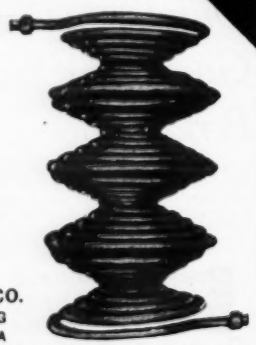
A NEW THERMOSTATIC TRAP

A cage contains the thermostatic member, carries its own seat and is a complete operating unit in itself. Easily and quickly replaced without special tools; simply lift out the old unit and drop in the new one. Send for illustrated Bulletin 234.

BARNES & JONES *Inc., 128 Brookside Ave.*
JAMAICA PLAIN, MASS.

COPPER COILS

for all makes of Instantaneous Water Heaters
"Coils That Are Really Guaranteed"
Catalogue Price List Mailed on Application
Also Mfrs. Water Motors



UNION COIL & MFG. CO.
207 INVESTMENT BUILDING
PITTSBURGH, PENNSYLVANIA

The Fairfield Oil Burner
NRA Member

One Model. Featuring quality and flexible capacity up to 3000′ steam radiation. Lowest price. Sold direct to dealer—No contract required.

Est. 1918

Greenwich, Conn.

Many Heating Men Attend Boston Building Congress

Members of the heating and plumbing divisions of the building industry were prominent at a recent meeting of the Boston Building Congress, which was addressed by Stephen F. Voorhees, chairman of the construction industry code committee. Herbert A. Snow, of Buerkel & Co, Inc., is secretary of the Boston Building Congress, and arranged for the construction industry conference, which was attended by approximately 150 persons. Others who took a prominent part included Thomas O'Callaghan, member of the code authority of the heating, piping and air conditioning contracting branch of the industry, Joseph F. Dwyer, president of the Heating, Piping and Air Conditioning Contractors Boston Association, P. W. Donoghue, member of the code committee of the National Association of Master Plumbers, and past president of that body, Frank A. Merrill, past president of the national heating association, E. A. Dusossoit of Lynch & Woodward, James P. Sullivan, Ned Cox of Pierce & Cox, master plumbers, H. E. Whitten and Peter J. McMurrer of the local heating group, and numerous manufacturers and wholesalers.

Boston Heating Contractors Elect Officers

Joseph F. Dwyer, formerly vice president of the Heating, Piping and Air Conditioning Contractors Boston Association, was elected president of that body at the annual meeting, held at the association offices a few weeks ago. Other officers include Louis McMurrer, elected vice president; Maurice E. Chase, re-elected treasurer, and Walter H. Oleson, re-elected clerk. The board of directors includes the officers and Harry E. Barber, Victor Kennealley, H. E. Warmbold and H. E. Whitten.

The annual meeting was well attended, a large majority of the members being present when E. A. Dusossoit, retiring president, called the meeting to order. Thomas O'Callaghan, national director from Boston, who is also a member of the Code Authority of the heating, piping and air conditioning contracting industry, reported on the action taken at the recent convention of the Heating, Piping and Air Conditioning Contractors National Association.

DOMESTIC HOT WATER • RAPID HEATING • HEAT CONTROL •
All from this single Automatic Unit

B. & G. TRIPLE DUTY HEATER

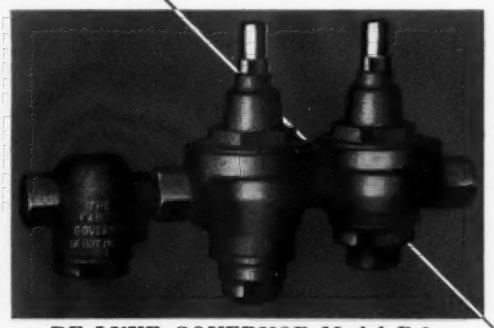
Here's an item with a real sales story of economy and comfort for owners of hot water heated homes—**the B & G Triple Duty Heater provides heat and hot water at less than the cost of heating alone! Increases circulation, automatically controls room temperature and assures almost instant heat at radiators upon demand. Rugged design, rubber-cradled, noiseless motor.** Write for details.

BELL & GOSSETT COMPANY
3000 Wallace St. Chicago

Harness the 3 Major Fuels

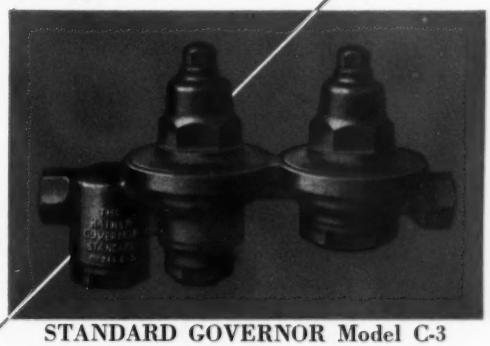
USE KAINER GOVERNORS

On Hot Water Heating Systems



DE LUXE GOVERNOR Model B-2

They Provide Automatic Supply, Better Circulation, Safety and Economy



STANDARD GOVERNOR Model C-3

HEATING CONTRACTORS . . . WHOLESALERS . . . OIL BURNER DEALERS

Nothing in the World assures you steady business or builds GOOD WILL and CUSTOMER SATISFACTION any better than SURE—QUICK—COMFORTABLE temperatures (at lowest cost) to Home Owners, obtained only with well regulated, *PROPERLY EQUIPPED* Hot Water Heating Systems REGARDLESS OF FUELS, be it GAS—OIL—or COAL.

It will be interesting for you to know that the KIND OF FUEL used IN NO WAY alters the efficiency of KAINER GOVERNORS. On the other hand KAINER GOVERNORS materially alter COSTS and EFFICIENCY of ALL FUELS.

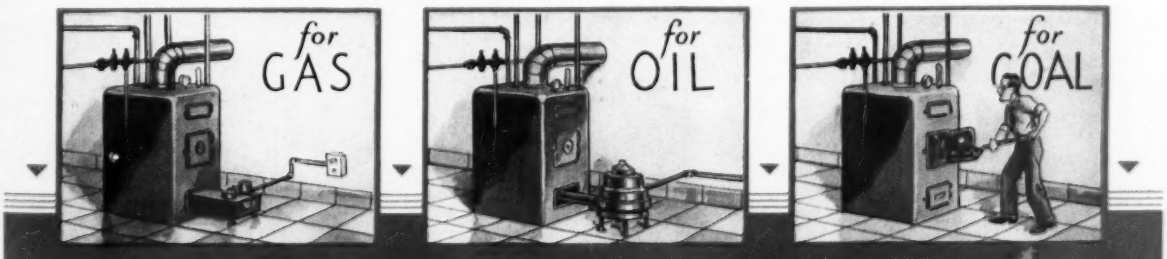
Whether a customer is GAS—OIL or COAL minded depends somewhat upon his ideas of COMFORT and convenience, but largely upon his FUEL BILLS.

Many changes are being made constantly from one type of heating equipment to another due to EXCESSIVE FUEL BILLS. Obviously, then, whichever TYPE of equipment you are promoting CAN BE MADE TO PERFORM *MOST* ECONOMICALLY by installing a KAINER GOVERNOR.

KAINER GOVERNORS *EXACT* the ULTIMATE in heating efficiency from these MAJOR FUELS. Put Kainer Governors on your heating jobs. They are not only PROFITABLE but will back you up in your theories on economical heating.

FULLY DESCRIPTIVE LITERATURE GLADLY SENT ON REQUEST

TAKE YOUR PICK—BUT USE A KAINER GOVERNOR!

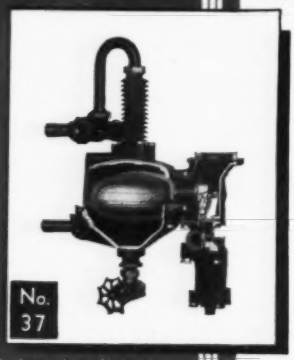


KAINER & COMPANY--760 Mather St.--CHICAGO

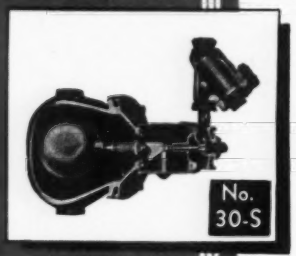
Stick to the "SHOW ME" ATTITUDE

and you won't go wrong!

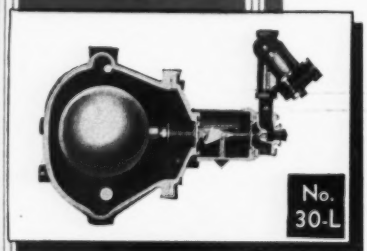
For HAND-FIRED JOBS



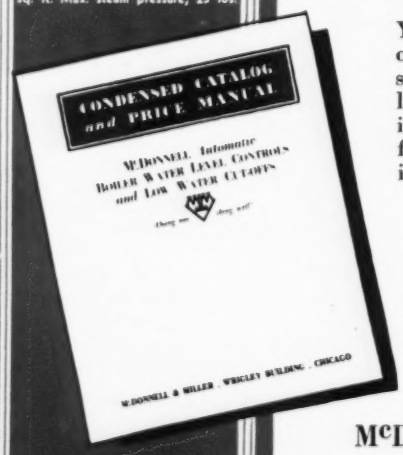
Feeder for quick installation in gauge-glass tappings of hand-fired jobs below 2500 sq. ft. Max. steam pressure, 15 lbs.



Feeder for hand-fired jobs between 2500 and 5000 sq. ft. Max. steam pressure, 15 lbs.



Feeder for hand-fired jobs above 5000 sq. ft. Max. steam pressure, 25 lbs.



When we built our first boiler feeders, ten years ago, the attitude of the heating field was strictly "show me!"

It caused us a lot of annoyance during those first years, but we could not deny the fact that it was a sensible attitude. We were asking the contractor to stake his whole job on the dependability of our feeder, and he had a right to demand proof of that dependability.

During the years since, thousands of McDonnell Boiler Water Level Controls have furnished that proof. Who, in fact, can deny that the record of McDonnell equipment has been the moving force behind the universal acceptance of boiler water level control?

Now comes the danger of swinging to the other extreme—the danger of assuming that anything called a boiler water level control is dependable—the danger of throwing away sensible caution.

To those who know the danger of extremes we say: "Don't forget who pioneered the cool feed-valve, the sylphon construction, and the long list of other features that made water level control dependable. Don't forget the record of McDonnell dependability. And don't forget the 'show me' attitude. If it was good sense ten years ago it is still good sense today!"

You pay no more for the proved dependability of the McDonnell Line. It includes a type of safety feeder, safety feeder-cut-off combination or low water cut-off for every type and size of heating boiler, hand-fired or automatically fired. The first hunch is usually the best. Stick to it and insist on McDonnell dependability.

Ask for new Bulletin 34

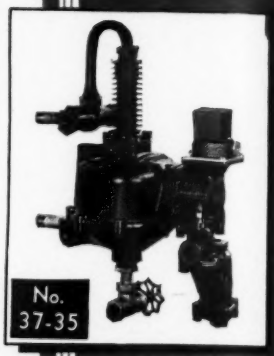
If you want the complete story of boiler water level control in the briefest possible form, ask for our new Bulletin 34. It contains facts and information that every contractor should have.

McDonnell & Miller, 1306 Wrigley Bldg., Chicago

McDONNELL
Boiler Water Level
CONTROL

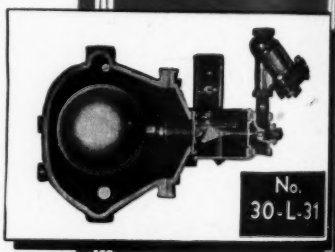
"Doing One Thing Well"

For AUTOMATIC JOBS

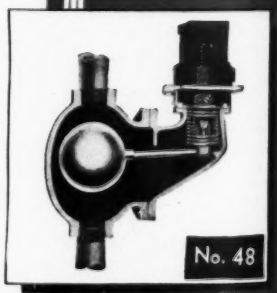


Feeder and Cut-off combined for automatic jobs below 2500 sq. ft. max. steam pressure, 15 lbs.

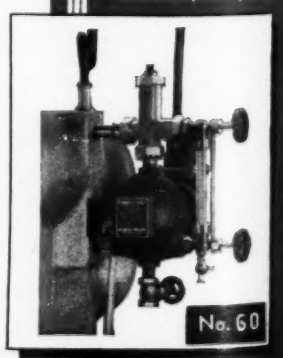
Combined feeder and Cut-off for automatic jobs from 2500 to 5000 sq. ft. max. steam pressure, 15 lbs.



Combined Feeder and Cut-off for automatic jobs above 5000 sq. ft. max. steam pressure, 25 lbs.



Cut-off for automatic jobs of any size. Max. steam pressure, 25 lbs.



Cut-off for quick installation in gauge glass tappings. Max. steam pressure, 25 lbs.

SUPPLY NEWS

Month's Developments among Manufacturers, Wholesalers and Salesmen in All Sections

Eastern Supply Association to Meet April 11

Eastern Supply Association will hold its spring convention April 11, 1934, in the Hotel Astor, New York City. Both morning and afternoon sessions will be held. The morning session will open at 10 o'clock. In the official call issued by J. M. Chaplain, president, and Frank S. Hanley, secretary, all members are urged to plan to attend. Among the reasons for attending the meeting, the invitation says: "We are in the midst of the Code era—over three hundred codes have been approved by President Roosevelt. Several codes in the Plumbing and Heating Industries and affiliated lines have been approved. This meeting, therefore, will be concerned with the operation of the approved codes in our industry, how they are working out, what improvement has resulted, and how they affect other branches of the industry. To bring before you a clear picture of our Industry under the codes so far approved we will have with us men of outstanding prominence in the Plumbing and Heating field who have sponsored or who are actively engaged in working out the various codes. The importance of this meeting to all manufacturers and wholesalers is evident. Your everyday business life is under code supervision. The meeting will afford you a real opportunity to get 'code-posted.'"

Call C. S. A. Meeting After Code Is Signed

Members of the Central Supply Association have been notified that a meeting will be held within two weeks after the signing of the wholesalers' code. This meeting will be at the Palmer House, Chicago.

Sessions on the first day will be open to all generally recognized wholesalers for the purpose of discussing the wholesalers' code. Zone and local fair competition committees also will be told what their powers and duties will be under the code. On the second day there will be a joint meeting of manufacturers and wholesalers. The manufacturers in each branch for which a code has been approved have been asked to select one member to appear at this meeting to explain those parts of his code of particular interest to wholesalers.

Opens Supply Business in Pottstown, Pa.

R. F. Smale Plumbing Supply Company is the name of a new plumbing supply business, which has been started in Pottstown, Pa. R. F. Smale, formerly manager of the Pottstown branch of Reading Foundry & Supply Co., is president of the new company. His son, Richard Smale, Jr., who was connected with Reading Foundry & Supply Co.'s branch at Phoenixville, Pa., will assist his father in the new company, as will Robert Yoder, who was also formerly with the Phoenixville branch of Reading Foundry & Supply Company.

Iowa Wholesalers Hear Code Report

Wholesalers of the Iowa division of the Central Western Credit Exchange met at Waterloo, Iowa, on March 21. This permitted them to attend some of the sessions of the Iowa Master Plumbers Association and also to hear a report by W. J. Spillane, chairman of the Joint National Committee of Wholesalers, on some of the activities in Washington regarding the wholesalers' code.

American Radiator and Standard Sanitary Shows Decrease in Deficit

The American Radiator and Standard Sanitary Corporation of New York City and subsidiary and affiliated companies reported for 1933 a net loss of $881,575 after expenses, taxes, interest, minority interest, depreciation and depletion. This compared with a net loss of $5,990,986 in 1932. Gross sales last year totaled $67,972,624, against $61,295,560 in 1932.

The balance sheet of Dec. 31 shows current assets of $55,261,918 and current liabilities of $7,505,231, compared with $50,988,891 and $6,674,865 respectively at the end of 1932. Cash, less a reserve of $500,000 for accounts in closed banks, totaled $15,273,661, against $19,844,772 after a reserve of $250,000 for losses on accounts in closed banks a year before. Inventories at cost or market, whichever is lower, totaled $26,183,238, compared with $20,930,463. Surplus at the close of 1933 amounted to $30,447,776, against $31,640,593 at the end of the preceding year.

The report shows that there was an increase during the year of $9,440,426 in the current and fixed assets of the company's foreign affiliated companies. This increase, which was due to the calculation of foreign exchange at rates on Dec. 31, was not included either in income or surplus. The increase in the valuation of current assets amounted to $2,422,089, while the gain in the value of fixed assets was $7,018,337.

"In every phase of its activities your company is in excellent position to take advantage of improved business conditions," Clarence M. Woolley, chairman, says in the report to stockholders. "The period of depression has enforced efficiency in manufacturing and selling methods and in better control of overhead expenses. Long continued development programs have enhanced the position of your company with respect to lines of product. The eventuation of all these factors into profit awaits the larger volume of business which will come with improved conditions in the building industry."

Kelley-How-Thomson Co's. Train Stops at Twenty-Nine Cities

The Kelley-How-Thomson Company of Duluth, Minn., recently sent a special publicity train, consisting of 9 cars, through parts of Minnesota, North Dakota and Montana, exhibiting the various lines handled by this concern. Four cars contained exhibits, and these cars were open to visitors in the twenty-nine cities where stops were made. The other cars in the train were: Two sleepers, one smoker, one observation car, and one diner. Aboard the train were fifteen representatives of the Kelley-How-Thomson Company and twenty-seven manufacturers' representatives. Plumbing and heating goods was well represented in the exhibit cars,

Interior of one of the exhibit cars in the Kelley-How-Thomson Co.'s train

under the supervision of J. P. Nelson, manager of the plumbing and heating departments of the Kelley-How-Thomson Co.

The exhibits were seen by 41,929 visitors in the twenty-nine cities at which stops were made. These cities were: Brainerd, Staples, Wadena, and Detroit Lakes, all in Minnesota; Fargo, Casselton, Valley City, Jamestown, Bismarck, Mandan, Dickinson, and Beach, all in North Dakota; Glendive and Sidney, both in Montana; Williston, Stanley, Minot, Rugby, Devils Lake, Lakota, Larimore, and Grand Forks, all in North Dakota; Crookston, Fosston, Bagley, Bemidji, Walker, Little Falls, St. Cloud and Duluth, all in Minnesota. The tour lasted eight days. Enthusiastic crowds gathered at all the above-mentioned cities, and schools were dismissed in some of them permitting students to view the train.

Has Opened Office in Philadelphia

The Reading Foundry & Supply Co., Reading, Pa., of which John G. Fleck is president, has opened an office in the Stephen Girard Building, Philadelphia, to handle its business and that of its associated companies.

New Partnership in New Location

Edwin F. Dishbrow and Walter Shwab, who recently organized the firm of Disbrow & Shwab for the purpose of acting as manufacturers' representatives have moved to 2509-11 Forty-second Road, Long Island City, N. Y.

Revere Will Sell Soldered Fittings

Arrangements have been completed whereby Revere Copper & Brass Inc., New York, will sell and distribute streamline soldered fittings as manufactured by the Streamline Pipe & Fittings Co., Port Huron, Mich., a division of the Mueller Brass Co. This will not in any way alter present selling plans of either company as regards other products but will mean that both will have these fittings available for sale.

In the plumbing industry, distribution will be through authorized plumbing supply distributors only, which is in keeping with the policies of both companies.

For use with these fittings, Revere will market its copper water tube. This is made in three types, the outside diameters for the respective sizes being the same so that size for size the same fittings may be used.

Is Now Quoting Net Prices to Plumbing Trade

The Uniflow Manufacturing Company of Erie, Pa., has announced that it has inaugurated a new system and is now quoting net prices on its water systems and water softeners to the plumbing trade. The management of this company feels that the previous practice in the trade of quoting list prices subject to discounts, has been more or less of a handicap to the plumber in readily figuring his cost. The officials of the Uniflow Manufacturing Co. believe that the practice of quoting a net price will commend itself to the plumbing industry, because it will eliminate figuring and puzzling over discounts.

Maine P. & H. Salesmen Hold Annual Convention

Owen L. Treat

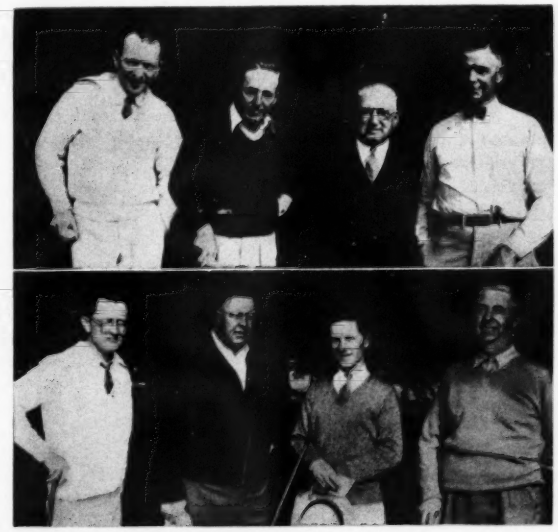
The Plumbing, Steam and Sheet Metal Salesmen's Association of the State of Maine held its annual convention and dinner at Portland, Me., on Monday, March 12. President Harold Knight called the meeting to order at 3 o'clock in the afternoon and appointed the following as members of the nominating committee: Theodore Henry, R. Rosebrook and William Moore. This committee submitted recommendations for officers for the ensuing year with the result that the following were elected: President, Owen L. Treat, Jenkins Bros.; first vice president, Percy A. Quimby, Smith & Abbott Co.; second vice president, Wm. J. Moore; third vice president, R. K. Austin; financial secretary, Clayton Prouty; recording secretary, F. G. Hall, and treasurer, F. S. Billings.

The following were admitted into membership: C. A. Luckey, Whitehead Metal Products Co.. B. J. Wilmont, American Brass Co.; D. E. Edwards and P. J. Brackman, both of National Radiator Corporation; L. T. Hullihan, Taco Heaters, Inc.; Daniel McNeil and Mr. Waters, both of Wheeling Steel Corp.; H. Hugo, Portland Copper Works; A. J. Thayer, Auburn, Me.; F. H. Smith, Minneapolis-Honeywell Regulator Co.; George E. Harmon, H. B. Smith Company, and Walter Styles, E. B. Badger & Sons Co.

Ed Pierce, formerly Maine representative for the Hoffman Specialty Co., sent in a letter of resignation, a letter was also read from Archie Campbell expressing regret over his inability to be present at the convention.

San Francisco Golfers Start Play for New Trophy

Members of the Plumbing and Heating Club of San Francisco have a new trophy to shoot for, known as the Rainwater trophy. Mr. Rainwater made a last minute decision to remain in San Francisco instead of going to Los Angeles, as previously announced, and so as to square himself with his golfing friends for the going away party at the last tournament, he offers a trophy. The member whose name is engraved on the cup as the low net winner of the greatest number of tournaments for the next twelve months will gain possession. For this reason Jack Camp and M. B. Woodson, winners in Class A and Class B, respectively, of the March tournament, held at the California Golf Club on March 15th, will head the list of some twenty-four names to be inscribed on the Rainwater trophy.



Top row, left to right: J. V. Greer, M. B. Woodson, N. W. Farlow and Jack Camp. Bottom row: H. P. Wilson, Frank Mosher, E. Heieck and Chris Peterson, at the March tournament of the Plumbing and Heating Club of San Francisco

In the March tournament Camp and Woodson played in a threesome, the third member being J. V. Greer who scored a birdie on the seventh hole, so the honors were fairly even for that group. The score:

	G	H	N		G	H	N
Camp	88	14	74	Greer	95	17	78
Woodson	88	19	69	Elliott	84	7	77
Taylor	101	14	87	Heieck	90	13	77
Mosher	96	16	80	Peterson	105	22	83
Wilson	111	15	96	Fuite	93	10	83
Mixter	87	6	81	Harmon	121	35	86
Rogers	117	(G)	117	Wooldridge	106	(G)	106
Robinson	120	(G)	120				

Permutit Announces New Distributors

The Permutit Company of New York City has announced the appointment of Thomas C. Brodie, Inc., San Francisco, to handle its water softeners, filters and activated carbon filters. The Brodie organization, a merchandising plumbing concern, is creating a new department for these products and planning an extensive local promotion.

A. B. Cheatham has been franchised in Redwood City, Calif., and brings seventeen dealers with him.

In Southern California, Warren Perin has been appointed

For Every Kind of Installation

Watrous

Liquid Soap Dispensers

OWING to the completeness and variety of the Watrous line of liquid soap fixtures, the right type can be readily selected to meet each individual need, in chromium plate or heavy nickel. The special requirements of clubs, schools, hotels, hospitals, industrial plants, etc., are fully provided for.

Every Modern Improvement

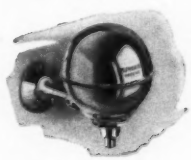
Although these fixtures have been in active demand for many years, they are always kept thoroughly up-to-date. Even in exterior design, the present models are in perfect keeping with modern architectural treatment. A few types are shown.

Art Crodon fixture for lavatory top

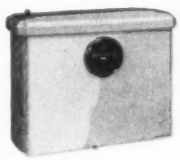
Latest push-in type with wall bracket

Concealed type, with push-button cap

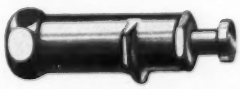
Invertible type for refilling. Plunger at foot



Wall type with metal container



Soap tank, vitreous china, with capacity gauge



Horizontal type valve threaded for ⅜" pipe

Write for catalog 433, giving full details of the entire line of Watrous plumbing fixtures.

IMPERIAL BRASS MFG. CO.

1231 West Harrison St., CHICAGO

Announcing

A New Line of Toilet Seats

WITH the recent purchase of a long-established toilet seat business, we take pleasure in announcing San-Equip Toilet Seats. A full line of sheet-covered, celluloid finish and varnish seats, built to San-Equip standards of quality, are now offered to the plumbing trade.

In keeping with our policy, these seats will be sold through the trade only. Before you place your next order, ask your jobber for complete San-Equip information. Compare these new seats for attractive appearance—test them for strength of construction. Then specify San-Equip when you buy.

SAN-EQUIP INC.
714 E. Brighton Ave. SYRACUSE, N. Y.

PATRICIAN

A Sea Pearl sheet covered seat with concealed hinge

San-Equip

TOILET SEATS

and will travel several salesmen to contact his 350 dealers.

In addition to these far western distributors, the Permutit Company has recently franchised George McVoy of Plainfield, N. J., W. S. Rickenbacker of Allentown, Pa., and Beaver Oil Heating Co., of Harrisburg, Pa.

Oliver P. Harris, manager of domestic sales of Permutit Co., has also announced the appointment of D. L. Pollock as factory representative. Mr. Pollock will travel through Michigan and a portion of Ohio.

Appointed Sales Representatives

Universal Power Corporation, manufacturers of arc welders, accessories and welding electrodes at Cleveland, Ohio, has appointed F. R. Faulk as its sales representative in the Pittsburgh district with headquarters at 50 Penn Avenue, Pittsburgh, Pa. The Universal Power Corporation has also appointed the Welding Equipment and Supply Company, 2720 East Grand Boulevard, Detroit, Mich., as its Detroit distributor.

L. R. Snelling Appointed Manager of Planning and Distribution

L. R. Snelling

National Radiator Corporation of Johnstown, Pa., has announced the appointment of L. R. Snelling as manager of planning and distribution. Mr. Snelling has had a wide experience in the heating industry, having started with the American Radiator Company 21 years ago. He became associated with the National Radiator Corporation as manager of its Buffalo branch in 1929; he was transferred to Philadelphia as manager of the company's branch in that city in 1932, and in 1933 he was called to Johnstown to direct all branch and divisional sales activities. In his new capacity, Mr. Snelling will supervise the development of sales plans and other policies of the corporation, while C. L. Crouse, vice president of the corporation, will direct all branch and divisional sales activities.

John G. Kelly, Inc., Appointed Sales Agents

Sani-Setting Compound Corp., 522 Fifth Avenue, New York City, announces the appointment of John G. Kelly, Inc., 210 East 45th Street, New York City, as its selling agents for New York State, New England states and northern New Jersey.

Ready for Business at Yonkers, N. Y.

I. Burack, Inc., of 175 West First Street, Mount Vernon, N. Y., has opened another plumbing and heating supply business at 550 Saw Mill River Road, Yonkers, N. Y., a new brick building, 75x100 ft. I. Burack is president and L. R. Gelles is secretary of this concern.

PLUMBERS AGREE

This new Master Septic Tank is easier to sell, install and service

The intake extension above ground marks tank location—provides access to intake baffle without digging. Also serves as fresh air intake to house stack. Liquid seal in tank prevents escaping gas. No other trap or vent needed.

The top intake permits sewage to enter tank more rapidly—effectively reduces possibility of clogging at this point.

Use of T-type intake allows tank to be set at any angle to house line. This simplifies installation where location of tank and drainage field is restricted.

Excavation is but slightly larger than the tank itself. Installation is easier and more economical than for tank where lack of shovel room requires extra digging.

"IT'S all you claim for it and more"—plumbers everywhere tell us. Study the pictures. They tell the complete story except for one point—your own profit in selling this tank. That's a story in itself.

We both know that "cut-price" tanks have been cutting deep into your septic sales and profits. By selling this new Master Septic Tank you can overcome chiseling competition—you make and keep the profit to which you are justly entitled.

There's no other tank on the market that has so many improved features to interest owners. And it's being sold as all San-Equip tanks have been sold for fifteen years—*through the plumbing trade exclusively*. Ask your jobber to show you this tank. Write us for further information. Get your share of the profits this new San-Equip Master Septic tank will bring to plumbing contractors.

SAN-EQUIP INC.
714 E. Brighton Ave., Syracuse, N. Y.

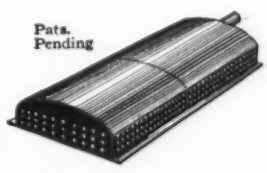
The San-Equip Vertical Tank

For jobs where cost is the first consideration and you must meet price competition, this improved septic will help you get the business. While the cost is the lowest consistent with safety, the new long flow feature insures an operating efficiency never before obtained except in premium tanks.

The San-Equip Drain Pool

A correctly designed seepage pool that completes the septic system. Easily installed with a saving in labor and materials. Sell a Drain Pool with every septic tank to double your profit. Provides a safer disposal service than the usual home-made equipment at little or no extra cost to owner.

Pats. Pending



San-Equip SEWAGE DISPOSAL

STEEL
PIPE
PITTSBURGH TUBE COMPANY
Standard and Copper Bearing Pipe » » Uniformly high in Quality and particularly adapted to the Plumbing and Heating Industry » » »
PITTSBURGH TUBE CO.
PITTSBURGH-PA.

Business Personals

W. KEITH MCAFEE, president of the Universal Sanitary Manufacturing Company, New Castle, Pa., was elected president of the American Ceramic Society at its recent annual convention which was held in Cincinnati. Mr. McAfee is treasurer of the Vitreous China Plumbing Fixture Association and a member of the Code Authority of the Plumbing Fixtures Industry.

FRED R. DANNIES, sales promotion manager of the National Radiator Corporation of Johnstown, Pa., has been appointed manager of its New York office, located at 55 West 42nd Street. As manager of this office, Mr. Dannies will direct the sales program in the metropolitan New York area. During 25 years' service in the heating industry, Mr. Dannies has held various important sales positions. He joined the National Radiator Corporation in 1928 as manager of its branch sales office in Milwaukee, Wis. In 1932 he was made manager of its Buffalo, N. Y., office, and in the early part of 1933 he was appointed sales promotion manager of the company.

WALTER WHITAKER, chief accountant for the American Radiator & Standard Sanitary Corporation of New York City since it was formed by consolidation in 1929, has been appointed comptroller of this corporation.

F. DONALD FENHAGEN has just been appointed Maryland representative for the Titusville Iron Works Company of Titusville, Pa., and for the Titusville Forge Company, also of Titusville. Mr. Fenhagen will make his headquarters in the Calvert Building, Baltimore, Md.

ROBERT L. LLOYD, formerly editor of "Ince" and in charge of direct mail production, has been promoted to the position of advertising manager of the International Nickel Company of New York City to succeed the late T. H. Bissell.

ROBERT CASTOR, formerly with the Lehigh Valley Supply Co. of Lansdale, Pa., has been appointed manager of Reading Foundry & Supply Co.'s branch at Pottstown, Pa., and Harry Wright, who was connected with Fleck Bros. Co.'s branch at Bryn Mawr, Pa., has been made manager of Reading Foundry & Supply Co.'s branch at Phoenixville, Pa.

W. W. Timmis

W. W. TIMMIS has been appointed manager in charge of sales of the Copper Pipe and Fittings Division of the American Radiator Company, according to announcement issued by Arthur R. Herske, vice-president and general manager of sales. Mr. Timmis has been connected with the plumbing and heating industry since 1920, having first worked as sales engineer for the Kewanee Boiler Corporation, now an affiliate of the American Radiator Company in the American Radiator and Standard Sanitary Corporation. A licensed professional engineer, he is a graduate of Swarthmore College, having received an M. E. degree from that institution in 1917, and for a year and a half he practiced as a consulting engineer specializing in plumbing and heating work.

OTTO A. WEISS of the Trenton Potteries Co., Philadelphia office, has taken over the territory formerly covered by Fred J. MacKenzie, who was recently transferred to the Chicago office. This territory consists of Maryland, Washington, District of Columbia and Virginia. In addition to this territory, Mr. Weiss will cover as heretofore, south Jersey, eastern Pennsylvania and Delaware.

Obituaries—

John Kupferle Raithel

John Kupferle Raithel, president and treasurer of the John Kupferle Foundry Company in St. Louis, Mo., died at his home in University City, Mo., on Tuesday, March 27, from a sudden attack of heart disease in his 41st year. He spent his usual hours at his office the day before his death and appeared to be in good health. He had been connected with the John Kupferle Foundry Company since 1909 and became its president and treasurer in 1925. His widow, one son, his mother and a sister survive him.

William M. Webster Called by Death

William M. Webster, formerly commissioner of the National Association of Brass Manufacturers, died at his home, 5730 Sheridan Road, Chicago, on Tuesday, March 27, after a brief illness, in his 72nd year. During the last four or five months his health had been declining. Mr. Webster was born in Rossville, Iowa, and came to Chicago 55 years ago. After having been connected with the plumbing supply business for some years, he became one of the founders and owners of the Walcott-Webster Co., a plumbing and heating supply business. Later he was for many years and until a few years ago commissioner of the National Association of Brass Manufacturers. He was also for a number of years commissioner of the Automotive Equipment Association. His widow and three daughters survive him.

Stanley G. Flagg, Jr.

Stanley G. Flagg, Jr., president of Stanley G. Flagg & Co., Inc., in Philadelphia, Pa., manufacturers of pipe fittings and valves, died at his home in that city on March 14, in his 75th year. His death, attributed to heart disease, was believed to have been hastened by the death of his wife, which occurred March 7. Mr. Flagg was one of the founders of the American Foundrymen's Association and served as its president in 1907-1908.

James A. Swan

James A. Swan, architectural representative in the Metropolitan New York area for Revere Copper and Brass Incorporated of New York City, died suddenly at his home at West Islip, Long Island, N. Y., on Thursday, March 8. Before coming to Revere Copper and Brass Incorporated in 1931, Mr. Swan had been connected with Rome Brass Radiator Corporation. Previous to that he had been connected with the American Radiator Company for many years. He is survived by his wife and three sons.

P. W. Cushman

Person Warren Cushman, president of the Cushman Heating Specialties Company of Cleveland, Ohio, died recently of a heart attack in his sixtieth year. For 25 years and until last year he was connected with the George Worthington Co. as a heating engineer. He founded his own company about a year ago. His wife survives him.

Frank W. Cruikshank Dies as Result of Accident

Frank W. Cruikshank of Decatur, Ill., died at his home in that city on Tuesday evening, February 27, as a result of the accidental discharge of a shotgun, which he was cleaning. Mr. Cruikshank was born in Chattanooga, Tenn., in 1872, and entered the service of the H. Mueller Mfg. Co. in Decatur, Ill., in 1899. He became a member of this company as assistant secretary in 1912, and retired from business in 1929. During the last three years he was active in the Tylac

ASK YOURSELF—

"What does the price include?"

FULL CUSHIONED POWER: An exclusive feature of the Deming "Marvelette" Water System. Thick, live rubber cushions eliminate metal-to-metal contacts between pump and tank and between pump and service lines.

REPULSION-INDUCTION MOTOR: Ask your Power Company which motor *they* recommend.

AIR VOLUME CONTROL: No water logged tanks with Deming.

12 Gallon Galvanized Tank
Automatic Oiling System
Stainless Steel Piston Rod
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Capacity . . . 250 Gallons per Hour

Write today for complete information

THE DEMING CO.
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SALEM, OHIO

Deming
HAND AND POWER PUMPS FOR ALL USES
PUMPS AND WATER SYSTEMS

factory in Monticello, Ill., of which his son, Philip H. Cruikshank, is president. Mr. Cruikshank married Miss Leda Mueller in 1898, a daughter of the late H. Mueller, the founder of the H. Mueller Mfg. Co., now the Mueller Co., and he is survived by his wife, a son, a daughter and four grandchildren. His burial took place in Decatur, Ill., March 1.

Edward F. McElheaney

Edward F. McElheaney, assistant treasurer of The Central Foundry Company of New York City, died Saturday, February 17, at the Muhlenberg Hospital, Plainfield, N. J., after a short illness of pneumonia. Mr. McElheaney was born in New Brunswick, N. J., 58 years ago, and he resided there and in Jersey City until he came to Cranford six months ago. He had been connected with the Central Foundry Company for the last 32 years. He was a member of the Elks and the Knights of Columbus. His widow and a sister survive him.

Chicago Plumbing Contractors to Hold Card Party and Dance

The entertainment committee of the Chicago Plumbing Contractors' Association has arranged for a card party and dance to be given by the association on Friday evening, April 13, in the Assembly Hall on the 14th floor of the Chicago Real Estate Board Building, 32 West Randolph Street, which will accommodate over 2,000. A cordial invitation will be extended to those engaged in the supply business to be in attendance. It is anticipated that between 1500 and 2000 will be in attendance. The entertainment committee consists of Wm. Gawne, chairman; Wm. Redieske, Chas. J. Stanley, Samuel Erman, J. G. Zajicek, L. P. Markowski, and Walter W. Sievers.

Pittsburgh Master Plumbers Open New Business Home

The Master Plumbers' Association of Pittsburgh and vicinity has moved its offices from the Fulton Building to the Chamber of Commerce Building, Pittsburgh, Pa., in order to be in close contact with the Code Authorities who will also be located in that building. The Master Plumbers Association has also secured membership in the Pittsburgh Chamber of Commerce and will be represented at all important meetings of that organization.

At the first meeting in its new home in the Chamber of Commerce Building, the Master Plumbers Association had 125 members and non-members in attendance. This meeting was announced as the birthday of a New Deal in the Plumbing Industry in Pittsburgh, and Secretary T. F. Scanlon acted as chairman and introduced the speakers, among them H. M. Reed, president of the Standard Sanitary Manufacturing Company, who spoke on the Plumbing Fixtures Code. Other speakers were: F. J. Hanley, president of the Pittsburgh Association and one of the directors of the Pennsylvania State Association of Master Plumbers; A. H. Cline, Jr., representing the Manufacturers of Plumbing Supplies in Pittsburgh; Harry C. Cole, representing the Jobbers of Plumbing Supplies in Pittsburgh, and J. C. Knox, representing the Hot Water Heater Manufacturers.

The meeting was such a great success that the officers of the Association sent Secretary Scanlon a letter of thanks and appreciation for his efforts in bringing success to the elaborate program.

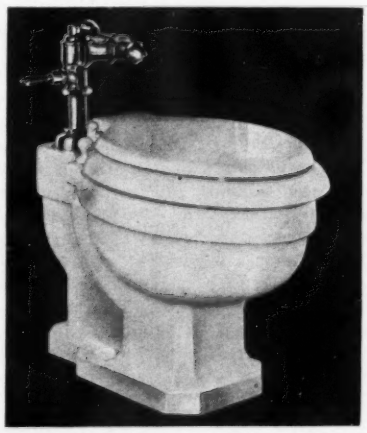
Seventy-five members of the Master Plumbers' Association of Pittsburgh recently visited the plant of the Acheson Mfg. Co. at Rankin, Pa., and arrangements are now being made for members of the Association to visit the plant of A. M. Byers Co. at Ambridge, Pa.

FROM CLEAR WATER
TO HEAVY SLUDGE
There is an Ames Pump for each particular problem.
NRA
WE DO OUR PART
AMES PUMP COMPANY, INC.
30 CHURCH STREET • NEW YORK, N. Y.
Manufacturers of vacuum heating, condensate, centrifugal pumps, and fuel oil pumping-heating units
Division of American Locomotive Company
Representatives in all principal cities. Products manufactured and sold in Canada by Montreal Locomotive Works, Ltd.

NEW STORE·SHOP and JOB ITEMS

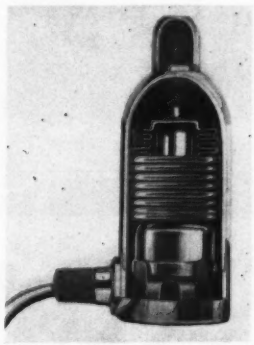
Flush Valve and Closet Combination

The flush valve and closet combination illustrated here just recently has been placed on the market. It is designed for quietness. The piston unit of the flush valve is made of a molded composition. The by-pass is designed to be self-cleaned and the control stop is made to serve as a throttle to permit accurate and quiet regulation of the velocity of flow of the water to the bowl at the desired rate, regardless of the water pressure. The adjustment for volume is made after the trip or relief valve is withdrawn from the unit. What is described as an anti-siphon stop can be furnished. Also a vacuum breaker can be supplied with this unit when ordered. Speakman Company, of Wilmington, Delaware, is the manufacturer.



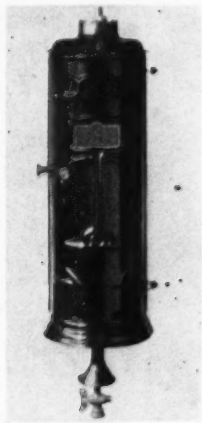
Vacuum Valve For One Pipe Jobs

Here is a valve which is constructed so that it can be used to convert a one pipe steam job into a vacuum system after the system has been tightened against air leaks. A special diaphragm action is combined with a bellows seal with the idea of increasing the vacuum efficiency of the valve. It is built to vent radiators so that they will heat quickly. As a radiator on which this valve is installed is vented, heat from the incoming steam expands the gas in the valve float. This flexes the diaphragm in the valve upward to force, rapidly, a seating pin into the vent hole for the purpose of closing the hole and preventing the valve from sputtering. When the steam pressure starts to fall, a special vent allows air to enter the bellows in the valve but not the valve proper. Pressure from this incoming air expands the bellows and holds the seating pin in place, thus sealing the vacuum in the radiator. The idea is that with all of the air resistance thus eliminated, the steam is permitted to flow easily through the heating system at sub-atmospheric pressures. This is manufactured by American Radiator and Standard Sanitary Corporation, of 40 W. 40th St., New York City.



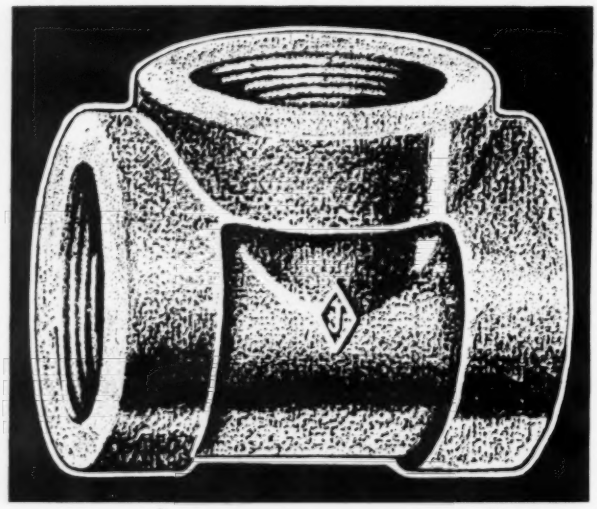
A New Line of Water Heaters

Here is a new line of water heaters, represented by the accompanying illustration, which are described as being all steel and nonbreakable. They are produced in three sizes



having coil lengths of 13 ft., 17 ft. and 21 ft. respectively. The two smaller units are finished in black japan only, while the larger unit is finished in black japan, pebbled ivory or grey porcelain enamel as desired. A new arrangement of the burner and coil has been made with the idea of permitting an increase of Btu. input for all sizes. Each size has a double, ¾-in. outside diameter copper coil wound in

JARECKI



FITTINGS

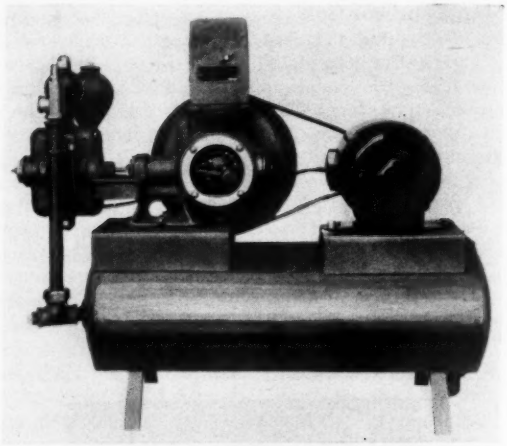
● To save time in production and to be assured the job will endure, depend on Jarecki Fittings! Accurate, clean-cut threads, careful inspection and a complete line, backed by 82 years' experience. Information gladly furnished.

JARECKI
MANUFACTURING CO.
ERIE, PA., U.S.A.

reverse grade. The two coils are separate and independent and either can be removed and replaced. The coils are flanged into hot-pressed brass union coil nuts and are joined by them to brass manifolds at the top and bottom. Ruud Manufacturing Company, of Pittsburgh, Pa., is the maker.

New Line of Water Systems

There has just been placed on the market a new line of water systems. The pump is designed with a feature on the water box for the purpose of increasing the suction lift.

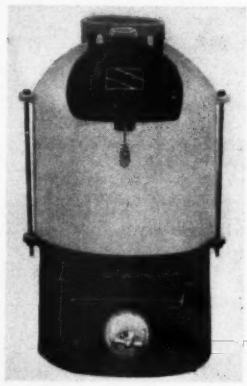


Another feature of this equipment is that it is made so that the removal of one nut from the housing permits access to the valves for adjustments or repairs. It is described as having a double set of spiral cut gears and pinions designed to produce quiet operation and low friction losses. Adjustable eccentric bearings are made to take up back lash in the gears when the pump gets older. Oil may be drained from the case and refilled in the same way used for an automobile. The head is made so that by the removal of five bolts it may be taken off without removing the base or any of the piping in the well or discharge line. Uniflow Manufacturing Co. of Erie, Pa., is the maker.

Line of Water Heaters Introduced

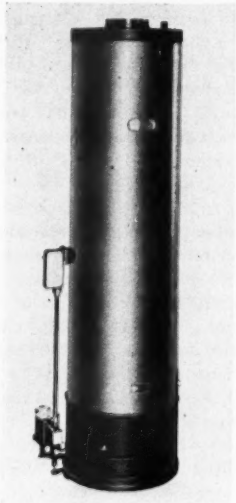
Here is a coal burning water heater which is made in a yellow and black finish. This unit is made in six sizes ranging in capacity from 40 to 250 gallons. Two types of heaters are included in this line, one the brickless type that circulates the water to the grate line in the cored jacket section. This type is described as being particularly adaptable where the fire in the heater is not to be burned continuously, and where the owner desires hot water quickly. The other type is lined with fire brick 6 in. deep which is designed with a deep fire pot to permit the heater to hold the fire for long periods. This latter type is built for users who desire hot water at all times and who keep the fire burning continuously. The grates of the flat rocking type in the 10-in. size consist of one center grate assembly in a round grate frame. The 12-in. grate is of the same construction except that there are two rocking grates instead of one. A special toggle catch, when released, permits the grate to be given a ¼ turn, thus dumping the entire fuel bed without the necessity of pulling clinkers through the feed door. This heater is made to burn any type of coal or coke. However, the manufac-

turer recommends the use of Anthracite pea-coal. Renown Stove Company, of Owosso, Michigan, is the manufacturer.



Oil Fired Water Heater

The accompanying illustration shows an oil fired water heater which has just been placed on the market for use in either cities or rural districts. The burner is described



as being of the low-draft type and is designed to operate on either number one oil or kerosene oil when necessary. An adjustable water temperature control is included in it. It is finished in black and gray colors. The model illustrated has a storage capacity listed as 23 gallons; a heating capacity of 15 gallons per hour on an 80 degree rise; an overall height of 57½ in.; an overall floor space requirement of 22 in. and a maximum auxiliary water storage capacity of 60 gallons. Both hot and cold water connections are ¾-in. Motor Wheel Corporation of Lansing, Mich., is the manufacturer.

C. E. Wenzel

Charles E. Wenzel, who was engaged in the plumbing business in Scranton, Pa., for many years, died at his home in that city on February 20 after a few weeks' illness in

.....i'm telling YOU!

. . . a plumber said he was getting three remodeling jobs . . . and figuring on four more . . . he said THAT was a sure sign people were reaching into the old sock and having those repairs made that they have been putting off while the depression was here. . . . SURE . . . plumbers say things are better right now and just to be sure they will keep their customers . . . they fix them up right and use the best materials.

A plumber knows he can depend on a manufacturer 24 years in business . . . so a plumber who wants to be SURE . . . puts in "HYGRADE" Bath Cocks, Laundry Waste Traps and American Seats. . . . Most plumbers have enough to worry about so they figure they better be sure the material is O. K. . . . and use THE American Line.

All good jobbers carry it.

Yours truly,

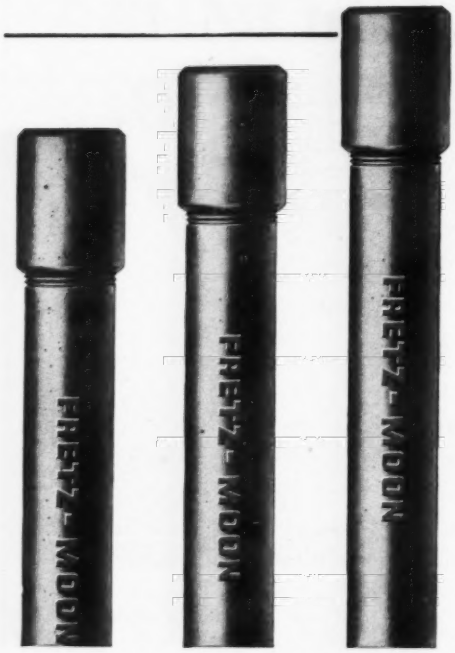
THE EAR-TO-THE-GROUND-MAN

of

American SANITARY MFG. CO.

ABINGDON, ILLINOIS

UNIFORMITY



FRETZ-MOON PIPE is always uniform—because it is made by an exclusive process that insures absolute uniformity. • This process differs from all other methods of gas welding in that it is continuous. The strips from which the pipe is made may be from 300 to 1200 feet long, and these are electrically welded together at the ends, so that actually Fretz-Moon Pipe is made from a long strip that ends only when the mill is stopped to change sizes. • This continuous strip travels through the welding furnace and welding rolls at a definite and closely controlled rate of speed. Furnace temperature is automatically maintained. Thus every foot of strip is at exactly the right welding temperature when welded. • There is not the slightest danger of over or under heating—therefore no hard or burnt spots to cause trouble in cutting, threading or bending—therefore a perfect gas weld. • If you would like to know more about this pipe that is recognized as the standard for uniformity by all who have used it, write for the complete story.

FRETZ-MOON TUBE CO., INC., Butler, Pa.

FRETZ-MOON
PIPE
BLACK AND GALVANIZED

his 68th year. Mr. Wenzel was born in Germany in 1866 and came to America with his parents in 1871. At the age of fourteen he left the public schools to work for a brass finishing company. Later he assisted his father in his tinsmith business. In 1896 he opened a plumbing business in partnership with Joseph Wolf. This partnership lasted until 1921, when Mr. Wolf retired and Mr. Wenzel took his son, Carl, in as a partner. The plumbing in many of Scranton's buildings was installed under Mr. Wenzel's supervision.

Theodore Ahrens Resigns

Theodore Ahrens

Theodore Ahrens, for many years one of the outstanding leaders in the plumbing industry, has resigned as president of the American Radiator and Standard Sanitary Corporation. Ill health led to Mr. Ahrens' resignation. His resignation, which became effective on February 13, was announced by Clarence M. Woolley, chairman, in his report to stockholders on March 26.

"This action," Mr. Woolley states in his report, "at the request of Mr. Ahrens was prompted by reason of continued illness and his desire to be relieved of the arduous duties of his office. We are pleased to state, however, that Mr. Ahrens will continue as a member of the executive committee and the board of directors of the corporation."

For several months, Mr. Ahrens had been in Florida having gone there for his health. Later he went to Hot Springs, Ark., planning to return to his home in Louisville, Ky., early in April.

Mr. Ahrens who is 75 years old has been at work since he was 13, leaving school to learn the trade of brass finisher and molder. When he was 21 he organized a plumbing business, styled Ahrens, Walker & Ryan, and seven years later purchased an interest in the business of his father, Ahrens & Ott, bathtub and plumbing supply manufacturers. Mr. Ahrens was largely credited for the rapid growth of that company. This company was absorbed in 1900 by the Standard Sanitary Mfg. Co. which Mr. Ahrens helped organize and of which he was made president. Several years ago the corporation merged with the American Radiator Company as the American Radiator and Standard Sanitary Corporation, Mr. Ahrens becoming president.

Among Mr. Ahrens' notable benefactions were two gifts of $150,000 each to the Ahrens Trade School. He also endowed a chair of ventilation and plumbing at the Carnegie Institute of Technology, Pittsburgh.

Water Heating—

(Continued from Page 27)

trols, I will quote from an advertisement which is typical of many appearing in the classified sections of our local newspapers:

"Lloyd Ct., W. 6235—6 Room lower, fireplace, refrigeration, remote control water heating, garage."

While we intend to continue selling automatic gas-fired water heaters to those who can afford its service, we believe that our promotional efforts can best be expended, for the present at least, on the sale of gas-fired circulating tank heaters and remote controls.

THE TRADE

News of what plumbing and heating contractors are doing the country over

H. P. A. C. C. N. A. Fix Dates for Annual Convention

The Heating, Piping and Air Conditioning Contractors National Association has announced that its forty-fifth annual convention will be held May 22, 23, 24 and 25 in Atlantic City with headquarters at the Ambassador Hotel.

Pennsylvania Master Plumbers Will Meet in Uniontown

The Pennsylvania State Association of Master Plumbers will hold its annual convention at Uniontown, Pa., June 18, 19 and 20. The Uniontown Master Plumbers Association expects an attendance of about 500 delegates and is making arrangements accordingly. The convention committee consists of the following: Sol B. Litman, chairman; C. P. Craig, treasurer; Everett D. Williams, F. N. Clement and Amadee M. Rhodes, all of Uniontown.

Michigan P. & H. Dealers Will Meet May 8 and 9

The Michigan State Association of Plumbing and Heating Dealers will hold its forty-second annual convention May 8 and 9 in Grand Rapids, Mich., with headquarters at the Pantlind Hotel. The officers of the association are: President, Henry Kraker, Holland; vice president, L. Earl Gresley, Port Huron; secretary and treasurer, Howard Reed, Jackson, Mich.

Washington State Convention To Be Held at Bremerton

The Washington State Association of Master Plumbers will hold its annual convention at Bremerton, Wash., May 26 and 27, with headquarters at the Enctai Hotel, according to announcement just received from James H. Hall, NRA state executive, of Seattle, Wash. The convention arrangement committee is headed by L. M. Hein of Bremerton.

Maryland Master Plumbers Elect Officers

The Association of Master Plumbers of the State of Maryland, Inc., held its annual election of officers in Baltimore, Md., on March 1. The following officers and directors were elected: President, Gustave G. Wirth; first vice president, John M. Frederick; second vice president, William A. Imbach; recording secretary, Thomas J. Thaler; sergeant-at-arms, Chester Weaver; secretary, Dorothea F. Clark. The board of directors: Frank J. Knell, chairman; Francis C. Dorsey, William F. Mylander, Samuel E. Houck and August Malthan.

Indiana Changes Convention Dates

The Indiana Association of Master Plumbers will hold its annual convention in Indianapolis, Ind., on May 15 and 16, and not on the 8th and 9th, as formerly announced, due to the fact that the Indiana general elections and registrations are to be held on May 8, according to announcement just received from Frank E. Irish, secretary and treasurer of the Indiana association.

Rhode Island Will Convene April 17

The Rhode Island State Association of Master Plumbers will hold its annual convention on Tuesday evening, April 17, at 7 o'clock, in the Dreyfus Hotel, Providence, R. I., according to announcement just received from Secretary F. G. Merewether of Riverside, R. I.

Virginia Plumbing Contractors to Meet at Charlottesville

The board of directors of the Virginia Associated Plumbing and Heating Contractors, Inc., held a meeting in Norfolk, Va., March 16, at which it was decided to hold the annual convention at Charlottesville, Va., the president to call the convention on or prior to April 30, depending on the signing of the Plumbing Industries Code.

Kentucky Masters Will Meet in May

The Kentucky State Association of Master Plumbers will hold its annual convention May 7 and 8 at Newport, Ky., with headquarters at the Glen Hotel, according to announcement issued by O. H. Mitzlaff of Louisville, Ky., secretary and treasurer of the association. The convention will be held under the auspices of the Northern Kentucky Association of Master Plumbers, of which Wm. Terwart of Covington, Ky., is secretary.

Georgia Masters Plumbers Select Atlanta

The Georgia State Association of Master Plumbers will hold its annual convention on April 30 and May 1 in Atlanta, Georgia, with headquarters at the Henry Grady Hotel, according to official call issued by President B. J. Seckinger of Atlanta.

Arizona Master Plumbers Will Go to Phoenix

The State Association of Master Plumbers of Arizona will hold its annual convention on May 5 and 6 at Phoenix.

Arizona, with headquarters at the Adams Hotel, according to the official call just issued by George G Doyle, Jr., secretary of the association.

Illinois and Wisconsin Delegates to Go by Special Train to Washington

Arrangements have been made by the Illinois and Wisconsin delegations to the National Convention to travel together in special cars to Washington, and if a sufficient number of master plumbers in the Middle West indicate their intention of attending the National Convention a special train will be chartered. They will leave Chicago on Saturday, May 26, at 8:30 p. m., over the Baltimore and Ohio Railroad, making the trip by daylight from Pittsburgh. This train traverses the scenic portion of the Baltimore and Ohio line in daylight, leaving Pittsburgh at 9 a. m., crossing the Allegheny and Blue Ridge Mountains, through Harper's Ferry, arriving at Washington on Sunday, May 27, at 4:40 p. m. The rate for the round trip to Washington on the identification certificate plan will be $37.04. The lower berth from Chicago to Washington will be $8.25 and the upper berth $6.60.

A cordial invitation is extended to master plumbers in this section who contemplate making the trip to Washington via Chicago to join the Illinois and Wisconsin delegation; also those coming from the West are most cordially invited. It is evidently expected that the delegation will comprise several special cars, if not a special train. Reservations can be made by addressing Peter M. Munn, secretary, Plumbing Contractors' Association of Chicago, 176 West Adams Street, Chicago, Illinois.

Oklahoma Holds Big Convention

ADDRESSES by such leaders in the trade as H. O. Green treasurer of the National Association of Master Plumbers; Jere Sheehan, director and past president of N. A. M. P., and H. F. Beglen, vice president of the Standard Sanitary Manufacturing Company, helped to make the 32nd annual convention of the Oklahoma State Association of Master Plumbers most successful in every respect. This convention was held in Tulsa, Okla., on Monday and Tuesday, March 19 and 20, with headquarters at the New Hotel Tulsa.

National Treasurer H. O. Green brought greetings from National President Robert J. Barrett and National Secretary Frank Bentley expressing their appreciation of the loyal support which their administration has received during the past year. He dwelt at length on the fact that the plumbing code compiled by the National Standardization Committee, under the direction of Chairman Jere L. Murphy, has been published, and he urged the Oklahoma members to make it a part of their work to get such a code adopted for the state of Oklahoma. He also suggested that a master plumber should appear before every civic club in the state and explain the importance of correctly installed plumbing systems.

In speaking of the coming convention and exposition of the National Association of Master Plumbers, which is to be held May 28, 29, 30 and 31, at Washington, D. C., Mr. Green asked his hearers to make it a point to do all in their power to attend this convention and thus visit the Nation's capital.

National Director Jere Sheehan of St. Louis opened his address by congratulating the association on its marvelous increase in membership during the administration of President Barrett due to code activities and possibilities.

Speaking about the Code of Fair Competition, Mr. Sheehan said: "We have all the resources and all the opportunities to do a good job at co-operation. The government is spending millions of dollars to help us toward co-operation. The three groups are in possession of opportunity, if they will only grasp it and be liberal with each other."

H. F. Beglen, vice president of Standard Sanitary Manufacturing Company, addressed the convention on the facts and the operation of the Code of Fair Competition for the Plumbing Fixtures Industry as approved on January 31. "This code is no mere gentlemen's agreement. It has the stern hand of Uncle Sam behind it. It is not a case of 'do or not do,' but a case of 'do.'"

At the Oklahoma Convention

ELECTION OF OFFICERS

The election of officers resulted as follows: President, John L. Swafford, Oklahoma City; vice president, W. R. Gilchrist, Clinton; secretary, John Leder, Oklahoma City; treasurer, Wm. F. Black, Enid.

Mr. Black has been treasurer for many years.

The zone governors elected are: Southwest district, George Paule, Hobart; southeast district, Patrick Leslie, Holdenville; northwest district. R. R. Books, Enid; northeast district, W. W. Ellison, Tulsa.

President N. G. Watt presided at the convention and announced the appointment of the following convention committees:

Resolutions: W. J. Casemore, Ponca City, chairman; W. R. Gilchrist, Clinton; Howard Moore, Oklahoma City.

Auditing: Carl Moore, Tulsa, chairman; Jack Walls, McAlester; Henry Kaiser, Oklahoma City.

Credentials: H. O. Green, Tulsa, chairman; Roy Clubb, Elk City; George Paule, Hobart.

Sergeant-at-Arms: S. G. Russell, Oklahoma City.

A telegram from W. E. Price, president of the Central Supply Association, was read expressing regret over his inability to attend the convention.

E. L. Freeman, president of the Tulsa Master Plumbers' Association, in addressing the convention said that all members of his association considered it a privilege to entertain the delegates to this convention, and he congratulated the state association on its wonderful increase in membership during the past year and on its fine attendance at this convention.

Mrs. N. G. Watt, president of the Oklahoma Women's Auxiliary, was introduced and greeted the convention. Mrs. H. O. Green, a director of the National Auxiliary, was the next speaker, and she in turn introduced Mrs. Edwin D. Hornbrook, past national president and founder of the auxiliary, who paid a wonderful tribute to the Master Plumbers' Association and the men, who have been responsible for its continued growth and success.

Carl McGregor, secretary of the Kansas State Association, brought greetings from his state.

OFFICERS' ANNUAL REPORTS

President Watt gave a detailed report of the activities of his office and thanked the members for their loyal support in the campaign for new members during the past year.

The reports of Secretary H. O. Green and Treasurer Wm. F. Black showed that the association has no bills payable and that the past year was a successful one financially.

Howard Moore, Sam Rice and Henry Hanson, all of Oklahoma City reported on the National Convention, held at New Orleans, La., last June.

Secretary H. O. Green, reporting for the credentials committee, announced that 91 members, 51 ladies and 39 guests were registered.

National Treasurer H. O. Green delivered a radio address on "Plumbing, Sanitation and Health" over Station KVOO.

W. J. Casemore of Ponca City, who attended the Kansas convention as President Watt's representative, delivered his report of that meeting.

It was decided that the next year's convention is to be held in Clinton.

The annual banquet and dance was held Monday evening at the Hotel Tulsa in the Topaz Room with more than 200 persons in attendance. H. O. Green acted as toastmaster, and one of the highlights of this function was the presentation of a gift to L. H. Scott, leader of the quartette.

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The spring of 1934 marks the dawn of better business and happier days for everybody. The man who plans to build a sound and profitable pump business must look well to the *foundation* of his business structure!

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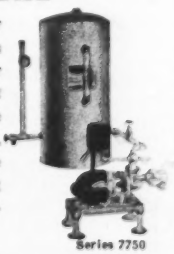

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Kansas Discusses Codes

THE forty-second annual convention of the Kansas Master Plumbers' Association, which was held at the Allis Hotel at Wichita, March 12, concentrated its attention on greater cooperation between the branches of the plumbing and heating industry, particularly between the master plumber and the wholesaler. It dealt largely with the industry's codes, proposed and signed.

Explanations of the codes and their purposes were given by men, who are leaders in their branches of the Industry.

W. E. Price, president of the Central Supply Association, spoke about the Wholesalers' Code, and said that he spoke for those manufacturers, wholesalers and master plumbers, who believe that trade should come through those three branches of the industry, and that each branch has a definite function.

National Treasurer and Director H. O. Green spoke about the activities of the National Association of Master Plumbers and its history. He paid tribute to those men who have kept the industry alive for more than fifty years and mentioned the late E. D. Hornbrook, a true friend of Kansas.

H. F. Beglen, vice president of the Standard Sanitary Manufacturing Co., spoke about the Manufacturers' Code and explained step by step just how it affects the master plumbers. W. E. McCollum, secretary of the Central Supply Association, told about the difficulties, which the wholesalers had experienced in getting their code, and about their attempt to co-operate with the National Association of Master Plumbers in the formulation of the Wholesaler's Code.

Harry L. Stevens, treasurer of the Kansas Master Plumbers' Association, spoke about the place of Kansas in the Code work and advocated greater co-operation between the master plumber and the wholesaler.

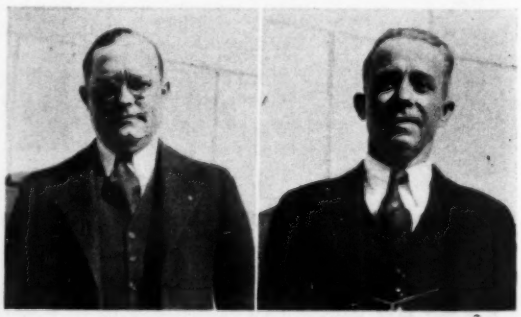
H. A. Bachofer, vice president of the Kansas Association, gave an interesting talk of his work as chairman of NRA work in Kansas under the National office.

Carl McGregor, secretary of the Kansas Association, outlined the work done on the Utility Anti-Merchandising Law in Kansas, and he said that this case has now reached the Supreme Court of the United States.

The convention authorized the board of directors to appoint a committee and to ask that a committee be appointed by the wholesalers; these two committees to hold regular meetings to work out the details of the codes when they are approved, for the better understanding of these codes.

Election of Officers

The officers were unanimously re-elected. They are: President, E. L. Wolf, McPherson; vice president, H. A. Bachofer, Salina; treasurer, Harry L. Stevens, Hutchinson.



Left to right: Harry L. Stevens, re-elected treasurer and Henry Bachofer, re-elected vice president

President Wolf re-appointed Carl McGregor of Winfield to serve another term as secretary.

President E. L. Wolf of McPherson

A resolution was passed endorsing the actions of the National Code Committee.

Nearly 250 attended the convention.

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400 at Minnesota Convention

A DETAILED report on the progress of the master plumbers' code by John J. Calnan of Chicago, vice president of the National Association of Master Plumbers, and a thorough discussion of the new Minnesota State Plumbing Code by W. J. Cannon, secretary of the Division of Plumbers' Licenses, were the outstanding features of the fortieth annual convention of the Minnesota State Association of Master Plumbers, which was held at the St. Paul Hotel, St. Paul, Minn., on February 6. This was one of the best and largest conventions which this association has held in recent years.

ELECTION OF OFFICERS

The election of officers and directors for the ensuing year resulted as follows:

President, Reuben L. Anderson, St. Paul.

First vice president, H. Hanson, Virginia, Minn.

Second vice president, Otto Nelson, Minneapolis.

Secretary, Oscar Nelson, St. Paul.

Treasurer, Fred C. Stiller, Minneapolis.

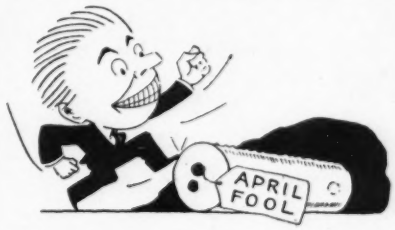
Board of Directors: A. J. Schirmer, Hibbing, Minn.; A. C. Plaunt, Duluth; Walter Krost, Fairmount; Ben Benson, Willmar; Charles Olson, Winona; H. Merwin Porter, Minneapolis; Louis Zuehls, St. Paul; W. A. Quinn, Minneapolis; W. L. Neihart, St. Paul, and Martin Wold, Duluth.

CONVENTION COMMITTEES

President H. Merwin Porter presided at the convention and announced the appointment of the following convention committees:

Auditing Committee: Louis Zuehls, chairman; A. M. Wintheiser, L. Lorch.

Conference Committee: W. L. Neihart, chairman; Henry Hanson, Leon Hanson.



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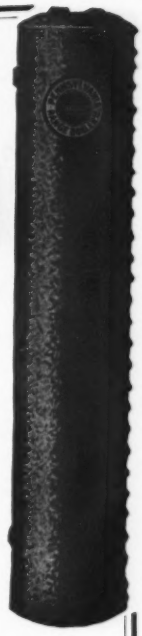

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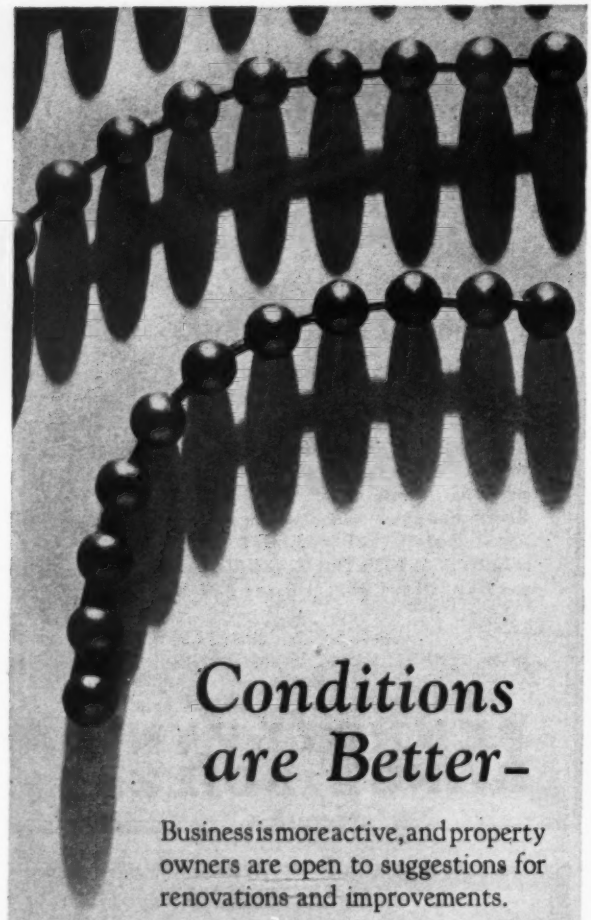

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Credentials Committee: Oscar Nelson, chairman, and Otto F. Nelson.

Memorial Committee: J. P. Clark, chairman; H. Gazett and M. T. Fox.

Nominating Committee: H. C. Nonnemacher, chairman; M. E. Elsen, Charles Doyle, Henry Hanson and Charles Olson.

Reception Committee: Walter Steimer, chairman; Hugo Guntzel, Ben, Liska.

Resolutions Committee: W. L. Neihart, chairman; M. T. Fox, W. G. Krost.

Rules Committee: A. E. Wickworth, chairman; M. E. Elsen, George Johnstone.

VICE PRESIDENT CALNAN ON THE NRA CODE

John J. Calnan, vice president of the National Association of Master Plumbers, brought greetings from this organization to the convention, expressing the hope that its deliberations would be helpful to all members of the trade in this section of the country, and would stimulate and strengthen both local, state and national associations. Continuing, he said in part: "When the government, under the National Recovery Act, decided to treat with recognized trade associations in the adoption of a code of fair competition, the value of the National Association of Master Plumbers was amply demonstrated. It also emphasized more than ever the necessity and importance of being well organized."

At the request of President Porter, Reuben L. Anderson of St. Paul gave a very informative talk on the status of the state plumbing code.

Mr. Anderson also delivered a detailed report about the activities of the St. Paul Association during the past year. The report showed a most gratifying increase in membership and it contained the estimate that 84 per cent of the buying power of the St. Paul plumbing and heating contractors is to be found in the association.

RESOLUTIONS ADOPTED

The following resolutions were adopted:

That the association will do everything possible to aid the State Board of Health in making the State Plumbing Law effective at the earliest possible date.

That the 41st annual convention of the Minnesota Master Plumbers' Association be held in the city of Virginia, Minn.

That the association desires to be of assistance and will bend its energy in an effort to give the National Association of Master Plumbers its support in securing a code of fair competition that will prove of great value to the plumbing industry.

ENTERTAINMENTS

Following the convention a banquet and dancing party was given in the Palm Room of the St. Paul Hotel.

Dinner was served to 400 men and women at 6:30 p. m. All of the Twin City jobbers were present, as were many of their salesmen. H. Merwin Porter acted as toastmaster and William Green, a St. Paul attorney, delivered the main speech, which was humorous and greatly enjoyed.

Arkansas Works for State Code

THE Arkansas State Association of Master Plumbers held its 12th annual convention at Little Rock, Monday, March 26th, with headquarters at the Hotel Ben McGehee.

When State President Arthur Pfeiffer of Little Rock sounded the gavel, opening the one day session, forty-one master plumbers were present. Louis J. Petrie, director,

and H. O. Green, treasurer of the National Association were in attendance as representatives of the National President.

The following committees were appointed:

Resolutions C. L. Jones, Little Rock, chairman; Geo. Robinson, Pine Bluff; Louis J. Petrie, New Orleans; H. O. Green, Tulsa.

Nominating: Percy Shaw, Little Rock, chairman; J. K. LeCroy, Hot Springs; Louis Hartmeier, Ft. Smith.

National Director Petrie in his address as representative of National President Robert J. Barrett, urged all members to make use of the complete service being given by the National Office at Washington, D. C. He also called attention to the service that is being rendered to master plumbers by President Barrett.

Director Petrie gave a detailed account of the difficulties which had been encountered by the Code Committee in its endeavors to obtain the approval of a code of fair competition which would be satisfactory to master plumbers. Mr. Petrie expressed as his opinion that this code would now be in operation at a very early date. In speaking of the coming National Convention to be held in Washington, D. C., the last week in May, the Director gave the delegates a very vivid picture of the many interesting places of historical interest to be seen in the Nation's Capital and urged every master plumber to make this trip.

The plan of co-operative merchandising of gas burning appliances as being used in New Orleans between public utilities and master plumbers was given in detail.

Al Borman of Hot Springs, who has been state treasurer for the past twelve years, made a strong plea for a campaign for additional members and explained a plan for putting such an effort into operation.

George Robinson of Pine Bluff addressed the convention on the need of a full time secretary, and this program was placed in the hands of the new officers for their consideration.

THE DANGER OF DEFECTIVE PLUMBING

H. O. Green, treasurer of the National Association, extended greetings from National President Barrett and National Secretary Frank Bentley and announced that President Barrett had been selected as a member of the Executive Committee of the Construction Code Authority. The Plumbing Code compiled by the National Standardization Committee under the direction of Chairman Jere L. Murphy of New York City was explained and the convention was urged to make use of this document, which has been approved by the National Association, in its efforts to secure a state code for Arkansas. The National Treasurer gave the convention some of the facts as shown by the recent report of the committee of Doctors appointed by Dr. Herman N. Bundesen, president of the Board of Health of the City of Chicago, to study the epidemic of amebic dysentery and made a forceful plea for master plumbers to carry these facts to their civic bodies, stressing this as the duty of plumbers to acquaint the public with the dangers of cross connections and defective plumbing systems. Mr. Green also urged all master plumbers to attend the coming National Convention in Washington, D. C.

The convention adopted several resolutions, briefly as follows:

1. Concurring in the acts of President Barrett in his efforts to secure a code for master plumbers and also commending the National Office staff for its prompt service in dealing with the membership.

2. To appoint a committee to endeavor to secure the passage of a plumbing code for the state of Arkansas.

3. To appoint a committee to attempt to obtain a plan of co-operative merchandising between the public utilities and master plumbers.

The following officers were elected: President, George

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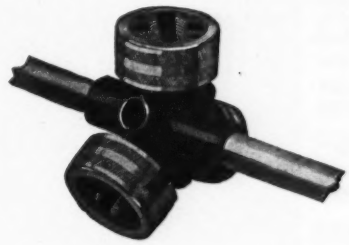

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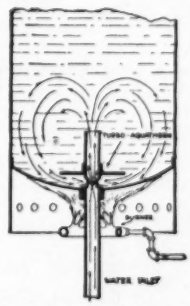

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W. Shirley, Van Buren; vice president, Henry Willms, Little Rock; treasurer, Al Borman, Hot Springs; secretary, Joe H. Bilheimer, Little Rock.

Mr. Shirley served as state President in 1931. Mr. Borman and Mr. Bilheimer have served in their respective offices since the organization of the State Association, this being the thirteenth time they have been elected.

The convention was better attended than usual, and the members appeared to be very much interested in the success of the organization. There were very few complaints and a great deal of praise for the members who have been active during the past year.

The radio address given by H. O. Green over station RLRA was prepared by Norman J. Radder of the Plumbing and Heating Industries Bureau.

Maine Convention Hears of Code

THE most impressive features of the annual convention of the Maine State Master Plumbers' Association, held at the DeWitt Hotel, Lewiston, Me., March 13 and 14, were a thorough discussion of the Code of Fair Competition by Past National President P. W. Donoghue, an excellent address on the prevention of epidemics of typhoid and dysentery, by Dr. Campbell of the Maine State Board of Health, and last, but not least, the re-election of all the officers of the association.

ALL OFFICERS RE-ELECTED

The re-elected officers are: President, John T. Kerrigan of Lewiston; vice president, E. N. Cunningham of Portland; treasurer, F. A. Taylor of Freeport, and secretary, J. E. Donovan of Winthrop.

The board of directors will remain the same as last year, with the exception of the vacancy caused by the death of L. P. Carter of Bar Harbor. President Kerrigan will name his successor at an early date. This board is composed as follows: W. S. Malcolm of Augusta, J. E. Donovan of Winthrop, George T. Noyes of Presque Isle, Christian Madsen of Portland, Carl Siemon of Auburn, Herbert J. Parent of Lewiston, N. M. Knudsen of Portland, Iver Iverson of Portland, C. B. Downing of Bangor, F. A. Taylor of Freeport, C. H. Webber of Dexter, L. M. Langley of Norway, E. N. Cunningham of Portland, and John T. Kerrigan of Lewiston.

President Kerrigan agreed to serve a third term as president on account of the work that has been done and the work that remains to be done on the new codes, rather than to pass this work over to a new officer.

P. W. DONOGHUE ON THE CODE OF FAIR COMPETITION

Past National President P. W. Donoghue of Boston brought greetings from National President Robert J. Barrett of Washington, D. C., and gave a detailed outline of the Construction Industry Code. He explained in detail competitive bidding practices as covered in Article VII, Section 1 of the general code. "Bid peddling and bid shopping are recognized as unfair and are prohibited," he continued. "This eliminates one of the greatest evils in the plumbing industry. Any and all bids, if made, shall be awarded at the bidder's original bid. Proper time and place for the filing of all bids will be determined for each local area. The greatest dispute that the master plumbers had with the wholesalers was, that, although the wholesalers agreed that the proper and right method of distribution was from manufacturer to wholesaler to contractor to consumer, they refused to write this down in their code. This omission leaves the wholesaler free to form any distribution plan he

may deem advisable. The master plumbers are absolutely opposed to lump price quotations for materials."

Regarding the activities of the National Association of Master Plumbers, Mr. Donoghue said that its membership has been increased in every state, excepting those of Maine, Utah and Nevada, and that the code is of no value unless the membership is built up and immediate steps are taken to impress every master plumber, whether or not he is an association member, with the fact that he must expect to pay his share of the expense of the administration of his codes.

THOS. O'CALLAGHAN ON HEATING CONTRACTORS' CODE

Thomas O'Callaghan, past president of the Boston Heating Contractors' Association and director of the Heating, Piping and Air Conditioning Contractors National Association, addressed the convention and explained the proposed Code of Fair Trade Practices for the Heating Industry. This code calls for the separation of bids on plumbing and heating contracts. Contractors will do business under the code, whether or not they are association members, and every contractor must contribute his share to the cost of the code administration. The National Recovery Administration will supply copies of this code to members of Master Plumbers' associations upon application at 5 cents a copy.

The following seven directors of the Heating, Piping and Air Conditioning Contractors' National Association have been elected to serve on the code authority and will take office when code is finally approved and the authority is established:

M. J. Chagnard, Louisville, Ky.
J. Lawrence De Neille, St. Louis, Mo.
Geo. H. Dickerson, Chicago.
Walter Klie, Cleveland, Ohio.
T. J. O'Callaghan, Boston, Mass.
Robert D. Williams (National President), New York City.
John H. Zink, Baltimore, Md.

The names of fifteen non-members have been selected and submitted to the government. Three of these will be designated to fill the quota of ten men to serve on the code authority.

DR. CAMPBELL ON PREVENTION OF EPIDEMICS

Dr. Campbell of the Maine State Board of Health gave a very interesting address about what the state is doing for the prevention of epidemics of typhoid and dysentery. Such diseases can generally be traced to the pollution of water, which is often caused by cross connections. He told of a recent canvass of all the mills and industrial plants in the state, during which 105 cases of pollution of water were found. Now the state insists that these industrial plants must install special cross connection valves on all process pipe lines that come in contact with city pressure water mains. All mills and industrial plants in the state are now inspected once a month by the local board of health and twice a year by the state board.

Secretary Donovan reported a total membership of 63, a gain of 15 members having been made during the last year.

Manhattan Master Plumbers Hold Beefsteak Party

The Manhattan Association of Master Plumbers held its annual beefsteak party at 2 Park Avenue, New York City, March 7, attended by approximately 200 master plumbers, wholesalers and manufacturers' representatives.

Among the speakers of the evening were Jere L. Murphy and Commissioner Sam Fassler. The affair was a pleasant success, and Henry H. Berg, chairman of the entertainment committee, was congratulated on his good work for the success of the party.

Celebrated Its First Anniversary

The West Suburban Master Plumbers' Association celebrated its first anniversary at the Carlton Hotel in Oak Park, Ill., February 20, with a good attendance. Its membership consists of master plumbers in Oak Park, River Forest, Riverside, Forest Park, Melrose Park, Maywood, Belwood, La Grange, Brookfield and Western Springs. The officers are: President, John S. MacKenzie, Oak Park; vice president, H. G. Philips, Western Springs, and secretary, Alfred Miller, Oak Park.

Director Swinnerton Gives Code Talk in San Francisco

Before a representative gathering of northern California masters, including R. W. Timmons of Richmond, president of the California State M. P. A., and Directors J. V. Young of San Francisco and W. H. Picard of Oakland, Chas. M. Swinnerton of Los Angeles, director of the N. A. M. P., delivered a timely talk on the status of the master plumbers' code at Plumbers Hall, San Francisco, on the evening of March 19th. A special meeting of the San Francisco masters was called for this purpose.

Indicating at the outset that the formulation of a satisfactory code required not only time to make it something of real value to the industry, Director Swinnerton made it plain that no efforts were spared to make the plumbers' code fit in with those of other branches. In this respect, the speaker said, "We must have the distribution so arranged that we will be able to put behind us all the evils that have made trouble for us in the past." Stating that certain interests in the wholesaler group have insisted on direct selling methods, Mr. Swinnerton pointed out what a continuation of this practice would mean to the industry.

He then touched on the high lights of the manufacturers' code and how this group has cooperated with the plumbers, especially with regard to the sale of damaged goods and selling to dealers in second hand building material. "The manufacturers have agreed there will be no sales except for resale."

Director Swinnerton then explained the provisions of the plumbers' code which, without reciprocal rules, was filed January 15. The director spoke before a meeting of East Bay plumbers in Oakland the following evening.

William N. McKenna

Wm. N. McKenna

William N. McKenna, one of the oldest master plumbers in Boston, Mass., died recently at his home on Beacon Hill in that city in his 75th year. Mr. McKenna was born in East Boston November 5, 1859, and he was a charter member and past president of the Boston Association of Master Plumbers. He also served as the third secretary of that association. He started in business in 1884 and would have been in business 50 years had he lived two months longer. He was captain and one of the oldest members of the Ancient and Honorable Artillery Company of Massachusetts. He was also affiliated with many civic and fraternal organizations and was a member of the American Society of Heating and Ventilating Engineers and of the Army and Navy Club. A son and two daughters survive him.

MADE FOR LONG RUGGED SERVICE

Boiler Tube Cleaners, Flue Brushes, Wire Heater Brushes, Handy Cleaner Brushes, Fire Brooms, Track Brooms.

Tempered Steel

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Catalog gladly sent upon request.

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THE LEADER FLOAT

THE Reichert quality line of tank balls and floats fills every requirement—complete satisfaction and an attractive profit for you.

Leader Tank Balls, well made of best materials assure long service. They seat perfectly every time. Priced unbelievably low, there is a big demand for this super-value — the biggest profit maker today.

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2238 Smead Ave., Toledo, O.

Four Hundred Detroit Masters See Sweat Fitting Demonstration

The Chase Brass & Copper Co., Inc., of Waterbury, Conn., gave a sweat fitting demonstration on Monday evening, March 5, at the Fort Wayne Hotel in Detroit, Mich., before an audience of 400 master plumbers and jobbers of that city. The speaker of the evening was O. W. Harrington, the company's sales engineer, who discussed copper tube and sweat fittings and also made up joints in front of the audience to illustrate his talk.

The meeting was opened by Harry Sprenkle, president of the Detroit Master Plumbers' Association, and W. C. Gram, district manager for Chase Brass & Copper Co., introduced Mr. Harrington.

The meeting was also featured by the display of other Chase Company products such as copper radiators, hot water heaters, humidifiers, electric heaters, and tub and shower fixtures.

Convention Dates

April, 1934.—VIRGINIA.—The annual convention of the Virginia Associated Plumbing and Heating Contractors, Inc., at Charlottesville, Va. The exact date will be announced later.

April 9 and 10, 1934.—MISSOURI.—The annual convention of the Missouri State Association of Master Plumbers, at St. Louis, Mo., with headquarters at Hotel Jefferson.

April 10, 1934.—MASSACHUSETTS.—The annual convention of the Massachusetts State Association of Master Plumbers, at Boston, Mass., with headquarters at the Copley-Plaza Hotel.

April 11, 1934.—E. S. A.—The spring meeting of the Eastern Supply Association, in New York City, with headquarters at the Hotel Astor.

April 16 and 17, 1934.—TEXAS.—The annual convention of the Associated Master Plumbers of Texas, at Galveston, Texas, with headquarters at the Buccaneer Hotel.

April 16 and 17, 1934.—NORTH DAKOTA.—The annual meeting of the State Association of Master Plumbers of North Dakota, at Grand Forks, N. D.

April 16, 17 and 18, 1934.—NEW YORK.—The annual convention of the New York State Association of Master Plumbers, in New York City, with headquarters at the Hotel Pennsylvania. All sessions will be held in the convention hall of that hotel.

April 17, 1934.—RHODE ISLAND.—The annual convention of the Rhode Island State Association of Master Plumbers, at Providence, with headquarters at the Dreyfus Hotel. The convention will be called to order at 7 p. m.

April 30 and May 1, 1934.—GEORGIA.—The annual convention of the Georgia State Association of Master Plumbers at Atlanta, Ga., with headquarters at the Henry Grady Hotel.

May 5, 1934.—IDAHO—The annual convention of the Idaho Master Plumbers' Association, at Boise, Idaho.

May 5 and 6, 1934.—ARIZONA.—The annual convention of the State Association of Master Plumbers of Arizona, at Phoenix, with headquarters at the Adams Hotel.

May 7 and 8, 1934.—FLORIDA.—The annual convention of Florida State Association of Master Plumbers and Heating Dealers, Inc., at Gainesville, Fla., with headquarters at the Graham Hotel.

May 7 and 8, 1934.—KENTUCKY.—The annual convention of Kentucky State Association of Master Plumbers, at Newport, Ky., with headquarters at the Glen Hotel.

May 8 and 9, 1934.—MICHIGAN.—The forty-second annual convention of the Michigan State Association of Plumbing and Heating Dealers, in Grand Rapids, Mich., with headquarters at the Pantlind Hotel.

May 9, 1934.—CONNECTICUT.—The annual meeting of the Master Plumbers Association of Connecticut, Inc., at Meriden, Conn.

May 11 and 12, 1934.—OREGON.—The annual convention of the Oregon State Association of Master Plumbers, at Portland, Oregon.

May 14 and 15, 1934.—ALABAMA.—The annual convention of the Alabama Association of Master Plumbers, at Birmingham, Ala.

May 15 and 16, 1934.—INDIANA.—The annual convention of the Indiana Association of Master Plumbers, at Indianapolis, Ind.

May 21, 1934.—TENNESSEE.—The annual convention of the Associated Master Plumbers of Tennessee, at Chattanooga, Tenn.

May 21 to 24, 1934.—CALIFORNIA.—The annual convention of the California State Master Plumbers' Association, at Sacramento, Calif., with headquarters at Hotel Senator.

May 22-25, 1934.—H. P. A. C. C. N. A.—The annual convention of the Heating, Piping and Air Conditioning Contractors National Association, at Atlantic City, N. J. Headquarters will be at the Ambassador Hotel.

May 26 and 27, 1934.—WASHINGTON.—The annual convention of the Washington State Association of Master Plumbers, at Bremerton, Wash., with headquarters at the Enetai Hotel.

May 28 and 29, 1934.—MONTANA.—The annual convention of Montana Master Plumbers' Association, at Miles City, Mont.

May 28, 29, 30 and 31, 1934.—N. A. M. P.—The Fifty-second Annual Convention and Exposition of the National Association of Master Plumbers, at Washington, D. C. The convention and the exposition will be held in the Washington Auditorium. Headquarters at Mayflower Hotel.

June 12, 13, 14 and 15, 1934.—N. D. H. A.—The twenty-fifth annual convention of the National District Heating Association at Rochester, N. Y.

June 18, 19 and 20, 1934.—PENNSYLVANIA.—The fortieth annual convention of the Pennsylvania State Association of Master Plumbers, at Uniontown, Pa.

June 20-22.—A. S. H. V. E.—The American Society of Heating and Ventilating Engineers' semi-annual meeting at The Inn, Buck Hill Falls, Pa.

New Trade Literature

Circulars About Unions and Fittings

M. L. Oberdorfer Brass Co. of Syracuse, N. Y., has issued two exceptionally neat circulars illustrating and describing its line of octagon all bronze unions for steam, water, gas or oil connections, and its bronze circulating boiler union couplings and elbows.

A Handbook on Self-Priming Centrifugal Pumps

The La Bour Company, Inc., of Elkhart, Ind., has issued a 30-page booklet on "Performance and Test Standards for Self-Priming Centrifugal Pumps." This handbook, as it is called on the title page, is published in the interest of those who buy, build, specify or use, such equipment.

Catalog of Deep and Shallow Well Water Systems

The Red Jacket Mfg. Co. of Davenport, Iowa, has just published its 1934 catalog of deep and shallow well water systems, a 32-page book, 6x9 in., containing illustrations and descriptions of its entire line of shallow and deep well units.

New Catalog of Pipe Tools

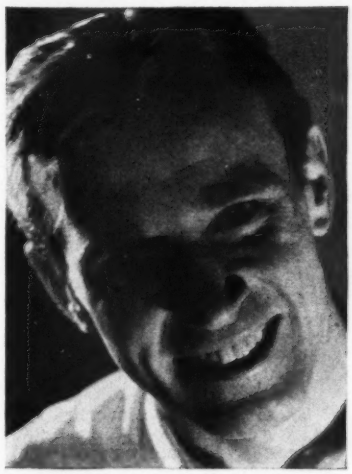
The Borden Company of Warren, Ohio, has issued a new 24-page catalog, 8½x11 in. in size, illustrating and describing its line of pipe tools, including electric pipe machines, ratchets, power adapters, pipe threaders, centering devices, stocks and dies, pipe cutters, extension drive shifts, tubing cutters, square-end sawing vises, and sulphurated threading oil.

Broadside Announces New All-Steel Tank Water Heaters

Ruud Manufacturing Company of Pittsburgh, Pa., has issued a broadside, 18x25 in., announcing its new line of all-steel tank water heaters. This new line is illustrated and described in detail. The points stressed are these: that these tank water heaters have pressed steel non-breakable shells, double copper coils, all-brass unions, and improved burner-mixer.

New Catalog of Water Systems, Hand and Power Pumps

Goulds Pumps, Incorporated, of Seneca Falls, N. Y., has issued its 1934 dealer catalog, consisting of 112 pages, 8½x11 in. in size, illustrating and describing its line of pumps and water systems, including many new and improved products,



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FOR two generations, Kennedy Fig. 27 has been the favorite standard pressure bronze gate valve of a host of contractors and engineers. The new Fig. 27 is even better than its predecessor, for it is stronger, heavier, made of better metal, and has several important improvements in design. To this line has also been added the new Kennedy Rising Stem Bronze Gate Valve, Fig. 25.

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300% MORE CUTS FROM EACH BLADE

NOBODY sneezes at economy these days—and 300% more pipe cuts is real saving. But the RIDGID gives you more than economy—much quicker cleaner cuts and far less changing of cutter blades. And it costs no more than other cutters.

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That's the secret—a tool steel heat-treated blade held on a solid hub, a better cutting tool than can be made any other way. Note also that the cutter housing is steel reinforced and flatly guaranteed against breaking or warping. Altogether a nicely balanced slick-working tool. Try it and see. Your jobber has it.

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such as overload and low voltage protection on all shallow well outfits, a 1,000-gallon per hour engine driven pumping unit, a new line of centrifugal pumping units complete with motors, a new line of centrifugal pumps for direct connection to electric motors, and a new line of motor driven rotary pumps, of helical gear type. This catalog is designed particularly for the plumbing and heating trade, and it is arranged most conveniently for reference.

Portfolio on Shower Cabinets

The Henry Weis Mfg. Co. of Elkhart, Ind., has issued an interesting portfolio containing sixteen attractive pieces of publicity for its shower cabinets, prepared in such a manner that they will no doubt prove most profitable for plumbing contractors who will use them. They are brought out at an opportune time for use during the spring and summer months, when the demand for shower baths is at its seasonal peak.

Bulletin on Equalizing Heating Systems

Gorton Heating Corporation of Cranford, N. J., has issued a bulletin describing and illustrating its equalizing steam and vapor heating systems and its sure vent equalizing valves. These systems have been designed especially to equalize steam and vapor heating systems where a thermostat is used to operate an oil burner, automatic stoker or gas-fired boiler, so that all radiators will heat up evenly and quickly and all rooms will be heated.

"What About Ventilation?"

The Swartwout Company of Cleveland, Ohio, has issued a colorful folder, "What About the Ventilation in Your Buildings?" and "The Controls on Your Steam, Air and Water Lines." The folder gives a bird's-eye view of the products of this concern, including hydromatic open bucket traps, differential pressure valves and pump governors, exhaust heads, pressure regulators, low pressure float traps, inverted bucket traps, feed water regulators, etc.

Issues New Brass Goods Catalog

Milwaukee Flush Valve Company of Milwaukee, Wis., has issued a new catalog covering its line of brass goods with illustrations, descriptions and all necessary data. The catalog consists of 64 pages, 8½x11 in. Predominant among the styles of fixtures and trimmings featured are the company's new art-craft designs for tubs, showers and lavatories. These fixtures and trimmings can be obtained either in chromium plate or nickel plate. It was the aim of the compiler in arranging this catalog to present the trade with a complete, easy-to-handle reference book of brass goods, and those who have seen the book agree in the opinion that he has been exceptionally successful.

Procedure Handbook of Arc Welding Design and Practice

The Lincoln Electric Company of Cleveland, Ohio, has just issued an enlarged edition of its "Procedure Handbook of Arc Welding Design and Practice," consisting of 454 pages, 6x9 in., neatly bound in imitation leather. This handbook has been designed to present in convenient form for ready reference the basic information on arc welding in its present status. Its contents include not only a complete description of the arc welding process in its various forms but also the essential data for its use in welding various types of steels, iron and non-ferrous metals. What one may expect from welds is answered in a section of the handbook devoted to the structure and properties of weld metal. A large portion of the book is devoted to designing for arc welded construction of machinery and structures. Applications of arc welding in manufacturing, construction and maintenance are also included, illustrating to a small extent the wide and varied use of the process and its potentialities as an industrial tool. More than 500 illustrations illuminate the text. The book is priced at $1.50 a copy.

WOMEN'S ACTIVITIES

By DOROTHY EDWARDS

National Auxiliary President, Mrs. Louise Liss, Issues Bulletin

Mrs. Louise Liss of Chicago, president of the Women's Auxiliary of N. A. M. P., recently issued a bulletin to auxiliary members, in which she said in part:

"The National Association of Master Plumbers has a decided increase in membership and I hope each local auxiliary is making an effort to increase its membership so that when the time comes we shall be more successful. Another incentive to increased membership is the prizes offered by the National Auxiliary to a State Division, also to a local auxiliary, for the largest increase in membership—$10 each.

"Our National Convention, this year, comes the last part of May (28 to 31). The weather is more delightful in Washington, D. C., the end of May than it is, as a rule, the third week in June. If any members of our auxiliary have boys or girls graduating from schools or colleges in June, our convention does not interfere with this, this year. The members can be back in time for graduating exercises. I hope as many as possible of the members will come to the convention this year.

"We have been able to take two new auxiliaries into our National, one in New York State and one in North Carolina.

"If any of the auxiliaries have elected new officers, please send me the names and addresses of these officers, especially the State Division should not fail to send the name of their president to me so that the right name will be printed in the program for our National Convention.

"If you have any suggestions for our coming convention, please send them on, and if possible, I shall try and use them."

Past Presidents' Club To Meet at Washington, D. C.

The Past Presidents' Club of the Women's Auxiliary to the National Association of Master Plumbers will meet with the National Auxiliary at Washington, D. C., on May 28, according to announcement just issued by Mrs. E. D. Hornbrook, president, and Mrs. H. L. Rose, Jr., secretary.

Oklahoma Women's Auxiliary Holds Convention in Tulsa

The Women's Auxiliary of the State of Oklahoma held its annual convention at Tulsa, Okla., March 20, simultaneously with the annual convention of the Oklahoma Master Plumbers' Association.

State President Mrs. N. G. Watt presided at the convention, which was addressed by National Director Mrs. H. O. Green, Mrs. Edwin D. Hornbrook and Past National President Jere Sheehan.

The following officers were elected for the ensuing year: President, S. G. Russell, Oklahoma City; vice president, R. R. Books, Enid; secretary, Mrs. M. Bateman, Oklahoma City; treasurer, Mrs. R. Eddie Chism, Tulsa, and chaplain, Mrs. Howard Moore, Oklahoma City.

The convention was a pleasant success and the fifty delegates in attendance enjoyed the hospitality of the Tulsa Association and Auxiliary.

Massachusetts Auxiliary Holds Annual Card Party

The Women's Auxiliary of the Massachusetts Master Plumbers Association held its annual card party at the Hotel Brunswick, Boston, Mass., on March 10. The party was a great success both socially and financially.

Maine State Auxiliary Holds Annual Convention

The Women's Auxiliary of the State of Maine held its annual meeting and election on Wednesday, March 14, at the Hotel DeWitt, Lewiston, Maine, in conjunction with the annual convention of the Maine State Association of Master Plumbers. The officers elected for the coming year are as follows: President, Mrs. H. J. Parent, Lewiston, Me.; vice president, Mrs. Chas. B. Downing, Bangor, Me.; secretary, Mrs. Christian Madsen, Portland, and treasurer, Mrs. Ernest Cunningham, Portland.

Officers of the Women's Auxiliary of the State of Maine M. P. A.: From left to right: Mrs. H. J. Parent, Lewiston; Mrs. Chas. B. Downing, Bangor; Mrs. Christian Madsen, Portland, and Mrs. Ernest Cunningham, Portland

Kansas Women's Auxiliary Holds Annual Convention

The Kansas Women's Auxiliary held its annual convention March 12 at Wichita, Kans., in conjunction with the annual convention of the Kansas Master Plumbers' Association.

The convention was held in the Inness Tea Room. Following the reports of the officers and the various committees, President Mrs. Ellis Billings appointed the following committees:

Courtesy: Mrs. Bert Ebersole, Hutchinson, and Mrs. J. E. Lansdowne, Wichita.

Nominating: Mrs. Wm. F. Ball, Kansas City; Mrs. J. M. Simmons, Wichita, and Mrs. C. E. Wilkie, Hutchinson.

Mrs. Fanny S. Dunaway reported that the Kansas Auxiliary had donated $10 to the Daughters Scholarship Loan

THE "MODERN" RANGE BOILER

30, 40 and 50 Gallons
200, 250 and 300 lb. Test

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In the above capacities the top and body of the "Modern" Boiler is formed from a single extra-heavy Copper Shell and drawn cold-seamless to the bottom, thus eliminating the top joint and the side seam and leaving only a bottom joint. The bottom head is hydraulically pressed on the shell and riveted securely with Copper Rivets closely spaced. Over the rivets a seamless copper band is spun and sweated, reinforcing the joint and making a solid construction which is impossible to come apart under any circumstance. Every boiler is reinforced internally and guaranteed against collapse. The interior is thoroughly tinned.

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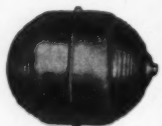

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THE CLEVELAND BRASS MANUFACTURING COMPANY
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Fund, and Mrs. J. M. Simmons reported on the Auxiliary Needle Work Guild which had given 110 garments to the State Orphans Home at Atchison.

The election of officers resulted as follows: President, Mrs. Ellis Billings, Arkansas City; first vice president, Mrs. R. D. Anderson, Pratt; second vice president, Mrs. J. E. Lansdowne, Wichita; third vice president, Mrs. W. T. Polley, Hutchinson; corresponding secretary, Mrs. Carl McGregor, Winfield; recording secretary, Mrs. Fanny S. Dunaway, Wichita; treasurer, Mrs. J. M. Simmons, Wichita; historian, Mrs. John Clark, Wichita.

Telegrams of greetings were read from Mrs. E. D. Hornbrook, Kansas City, Mo.; National President, Mrs. Robert Liss of Chicago, and National Director, Mrs. H. O. Green of Tulsa, Okla.

St. Louis Auxiliary Makes Plans for State Convention

The St. Louis, Mo., Women's Auxiliary held its regular monthly meeting on Thursday afternoon, March 8, at the Carpentier Branch Library in that city. A delicious luncheon was prepared and served by the hostess, Mrs. E. E. Manahan, and her assistant, Mrs. A. Schneider. A new assistant is selected every month.

After the luncheon the business meeting was held, at which plans were made for the state convention of the women's auxiliaries in Missouri, which is to be held at Hotel Jefferson in St. Louis April 9 and 10. The St. Louis Auxiliary hopes that many auxiliary members from all parts of the state will attend this convention.

Three new members attended this meeting, and attendance prizes were awarded to Mrs. Nellie Ryffel and Mrs. H. Schlapprizzi.

Rock Island-Moline Auxiliary to Aid Student Loan Fund

The Rock Island-Moline, Ill., Women's Auxiliary met at the home of Mrs. A. N. McNeil, Rock Island, on March 12. Very interesting messages were read from National Auxiliary President, Mrs. Robert Liss of Chicago and the newly elected State President, Mrs. Fred Hager, also of Chicago.

Plans were completed for a series of card parties sponsored by the auxiliary members to raise funds for the Student Loan Fund. Eight members and one guest were present at the meeting. Following the transaction of business, cards were played. At the conclusion of the games, the hostess served delicious refreshments.

Queens Borough Auxiliary to Hold Charity Card Party

The Queensborough Branch of the New York City Women's Auxiliary met on March 7 at the K. of C. hall in Jamaica, Long Island. Plans for a charity card party were completed, the party to be held at Tillson's Amber Lantern, Flushing, L. I. Five dollars was donated to the Daily Star Coal Fund. At the close of the meeting refreshments were served, at which the men joined the ladies.

Kansas City Auxiliary Elects Officers

On March 15, the members of the Kansas City, Mo. auxiliary met at the home of Mrs. Charles Herold. Following the meeting, a St. Patrick's luncheon was served. On February 8 the members elected Mrs. E. D. Hornbrook, president; Mrs. Charles Herold, first vice-president; Mrs. William R. Dunlap, second vice-president; Mrs. Frank Smith, 3rd vice-president; Mrs. Eva Enggas, treasurer; Mrs. Erwin Spaeth, recording secretary; Mrs. Ira E. Henderson, corresponding secretary, and Mrs. William Cowgar, historian.

Miss Leona Hanson, a member of the auxiliary "in the good old days" passed away recently after an illness of

several years. Miss Hanson had been active in auxiliary work but more recently had been forced to give it up because of her illness.

Dayton Auxiliary Celebrates Birthday of Wm. Haas

The Women's Auxiliary of Dayton, Ohio, held its regular monthly meeting on March 15 at the home of Mrs. Henry Blank. Following the business session, cards were played and a dainty luncheon served.

On March 17, St. Patrick's day, members of the Women's Auxiliary and their husbands attended a nicely arranged card party at the home of Mr. and Mrs. William Haas. Approximately fifty persons were in attendance and helped to celebrate Mr. Haas' birthday. Cards were played till a late hour and prizes were awarded to the winners. A fine lunch and refreshments were served by the Haas family.

After the merrymaking of the evening, short talks were made by Mrs. Henry Saunders, president of the auxiliary, Henry Blank, vice president of the Ohio Master Plumbers' Association, and William Haas.

National Auxiliary Treasurer Entertained by Tampa Auxiliary

Mr. and Mrs. J. Miller Heidweiler of Trenton, N. J., were guests of Mrs. W. E. McAndrew, Tampa, Fla., past national president, at her home recently. Mrs. Heidweiler is national treasurer and a past state president of New Jersey. She and her husband were entertained at several affairs during their visit, including a dinner given by the Tampa Auxiliary. Mrs. Lee Phillips, Lakeland, Fla., state president, was also a guest at this dinner. The valentine motif was carried out since it was Valentine's Day. Mrs. Heidweiler received a lovely gift from the Tampa Auxiliary.

Montclair Auxiliary Elects Officers

The Women's Auxiliary of the Montclair, N. J., Association of Master Plumbers recently elected the following officers for the ensuing year: Mrs. George Garritson, Upper Montclair, president; Mrs. J. Hayes, Upper Montclair, vice president; Mrs. Henry Williamson, Montclair, treasurer; Mrs. James Fitzgerald, Montclair, secretary; Mrs. A. Kievit, Upper Montclair, three-year trustee; Mrs. J. Heyrich, Montclair, two-year trustee; Mrs. H. Burnett, Bloomfield, one-year trustee, and Mrs. L. Helwig, sergeant-at-arms.

Rochester Auxiliary Entertained by Mrs. J. A. Paulus

The Women's Auxiliary of the Associated Master Plumbers of Rochester, New York, met at the home of Mrs. Jos. A. Paulus on Wednesday afternoon, March 14. There were 20 members present. Mrs. Paulus served coffee and dessert. Later cards were played and prizes awarded at each table.

Bronx Auxiliary Installs Officers

The installation meeting of the Women's Auxiliary to the Bronx, N. Y., Master Plumbers' Association was held on February 27. The following officers were installed: Mrs. Woodward F. Ebner, president; Mrs. S. G. Arnone, vice-president; Mrs. Anthony Platt, treasurer; Mrs. Henry Kroepke, corresponding secretary; Mrs. Theresa Grant, recording secretary and Mrs. Richard M. Lyons, publicity chairlady. Mrs. Matthew J. Kennedy, president of the Brooklyn Women's Auxiliary, and Matthew J. Kennedy, president of Greater New York Association, were guests of honor. In recognition of their faithful services, the retiring officers were presented with lovely gifts while the incoming and retiring presidents were presented with baskets of beautiful flowers. After the installation, the ladies and their husbands enjoyed a delicious dinner at the Fordham Gardens.

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Improved Pipe Cutters

Years of extra service are built into ARMSTRONG BROS. "Saunders Type" and "Barnes Type" Pipe Cutters with hardened steels and drop forgings at wearing points. Thrust rods are hardened on the end and bear on a hardened steel block that is embedded in the swinging arm. Pins and rollers, too, are tool steel, will hold alignment without wobbling. The "Barnes Type" has a thread housing of drop forged steel. Equipped with keen penetrating Knife Blade Cutter Wheels of special Vanadium Tool Steel, heat treated, oil tempered and Cadmium Plated.

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HINDLEY'S *Plumbers'* SPECIALTIES

are accepted by plumbers universally because they provide quality and reliability consistent with good workmanship. Hindley's are saving time, money and tempers every day in the year. Complete line displayed in Domestic Engineering Plumbing & Heating Catalog.

HINDLEY MFG. CO., VALLEY FALLS, R. I.

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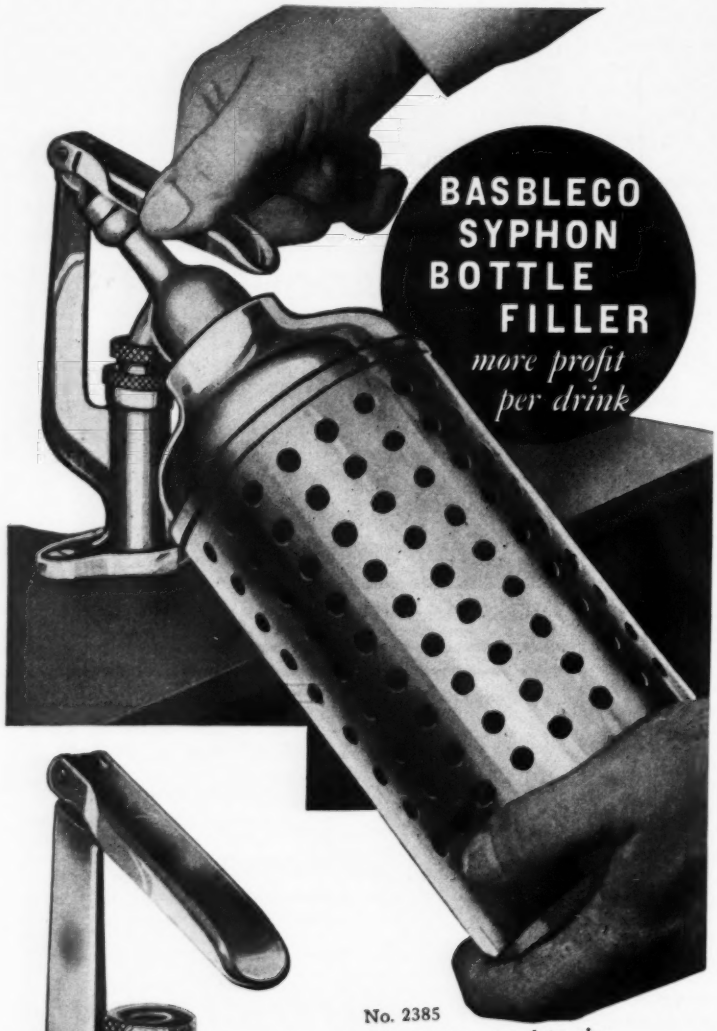
A NEW RAPID SELLER

PROFIT for You and Your Customer



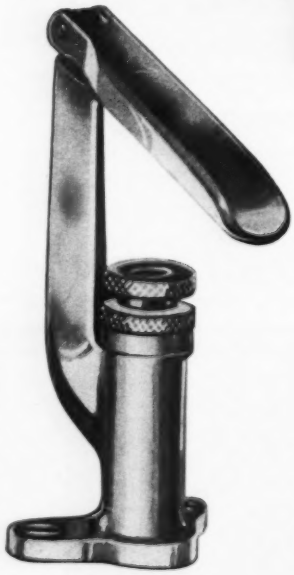
Show your customer definite extra profits. Show him how to serve better drinks for less money. A seltzer drink is better than a drink mixed with soda or ginger ale, and costs much less to make, with the Basbleco Syphon Bottle Filler. Syphon bottles can be filled at less than 1c each when carbonic gas costs 20c per pound.

The bartender fills his own bottles at odd times. Speedier, cheaper, more convenient bar service. The equipment pays for itself. When carbonic gas is used for serving beer, the same gas tank can be used for making seltzer by using both high and low pressure CO_2 regulators, attached to the tank by a No. 2390 double connection.

If draft beer is served at bar, a No. 2327 cooler is located in beer coil box. Otherwise, a cooler box is necessary. If city water is cloudy or unfit, a water filter may be used.

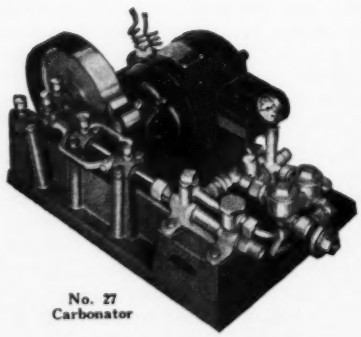
The No. 27 carbonator, recommended for this service, produces a super-carbonated water without attaining the usual high commercial filling pressures. It pumps measured amounts of gas and water through the No. 2327 coolers, at which point complete saturation is accomplished at low temperatures. Operated from a lighting circuit. In ordering, specify alternating or direct current, and voltage.

THE BASTIAN-BLESSING COMPANY
240 E. Ontario St., Chicago

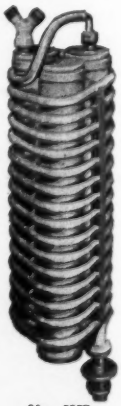


No. 2385 outfit comes complete, including bottle guard, and filler guard as shown, together with No. 2-95 shut-off valve and connection for ¼", 4-ounce block tin pipe. Shank of filler valve is standard for ⅞" drain-board thickness.

We also manufacture Bar Fixtures, Carbonators, Soda Fountains, Coffee Urns, Ice Cream Freezers



No. 27 Carbonator



No. 2327

BASTIAN-BLESSING

Manufacturers of approved dispensing equipment for nearly half a century.

BEER *and* BAR EQUIPMENT

SECTION OF DOMESTIC ENGINEERING

New Taverns Demand New Standard of Sanitation

By S. M. Barr

THE plumbing equipment that goes into the establishment where beer and ale are served, very largely determines the sanitary standards of the premises.

Now that the public drinking place has again become an established institution, however, and an entirely new start has been made, a great opportunity has been and is continuing to be presented to the health or sanitary officials of cities and towns, to start at the very beginning of the new conditions, with the very best, most up-to-date, most sanitary regulations possible for public drinking places.

In many instances the management of public drinking establishments will co-operate to the limit, in obtaining the very best sanitary conditions for their places. Such an example is shown in Fig. 1. One could hardly conceive so well-appointed a place as this putting up with anything but the best. But there are other types of places, around which the plumbing ordinances must set up definite safeguards. A number of unsanitary practices would not often come under the plumbing inspector's jurisdiction. However, his department often and perhaps generally comes under the health department, in which case there can be intelligent and effective co-operation in the securing of action to overcome abuses, as well as intelligent planning of that part of the sanitary program which concerns the plumbing naturally required in these establishments.

In one of the leading large cities of New England, where the plumbing department is a separate city department, special co-operation has been arranged for between this and the health department, with fine results being obtained.

This particular city, Providence, R. I., is fortunate in having as its chief plumbing inspector Mr. M. Carbon, a man who is entirely conversant with the terrible conditions that often obtained in old-time saloons and who resolved that in Providence they should no longer obtain in the newly established taverns, or whatever they may be called in that city.

Some of the principles on which he worked are so basic that we are going to present them here for the benefit of all who may read and particularly for the benefit of the plumbing departments of other cities and towns, which have perhaps not given the serious attention and thought to the subject that it certainly should have.

Fig. 1—"In many instances, the management of public drinking will cooperate to the limit in obtaining the very best sanitary conditions"

While this illustration shows primarily an eating place, it indicates to good effect the very pleasing appearance which can be brought about with good equipment and scrupulously clean surroundings. This particular place is air conditioned with a 10-ton compressor and three vertical type cooling units

In the Providence efforts to obtain as excellent sanitation as possible, the old gutter that formerly often ran the full length of the bar, is no longer allowed. Neither is the bar-room floor drain now tolerated. Both these things became receptacles for every kind of filth and the room is far better without them.

Every drinking place in Providence is required to have a toilet room, which must be equipped in regulation manner, the equipment varying only in the number of fixtures installed.

The minimum requirement for this toilet room is a water closet and a urinal, with a sink located just outside, but not inside the toilet room. The typical layout is shown in Fig. 4. Such a layout as seen in Fig. 3 is not allowed, as use of a sink or lavatory inside the toilet room is considered an unsanitary measure. To anyone having any knowledge of the bar-room toilet problem, the reason why the sink is required to be outside is perfectly evident—if located inside it would certainly sometimes be put to an entirely wrong use.

The dark or ill-lighted bar toilet room of pre-prohibition days was often a most obnoxious thing. Remembering these conditions, the Providence regulations have been made to call for the switching on of one or more electric bulbs whenever the door is opened. Opening of the toilet room door likewise automatically sets an electric fan in operation for the ventilation of the room.

AUTOMATIC VENTILATION PROVISIONS

In pre-prohibition days hundreds of saloons were entirely without a pressure supply of hot water. In some instances where the proprietor had some idea of sanitary necessity, a sort of makeshift supply of hot water was obtained from heating it on gas stoves, etc., but this of course was far from meeting the requirement in an effective, sanitary way.

The thought of washing beer glasses only in cold water certainly is most repugnant.

Now, however, every establishment has to be provided with ample facilities for washing, rinsing and sterilizing with hot water.

In Fig. 2 is shown a typical bar sink installation. Double compartment sinks are now used, together with rinsing equipment, resulting in first-class sanitary conditions.

(Continued on Page 152)

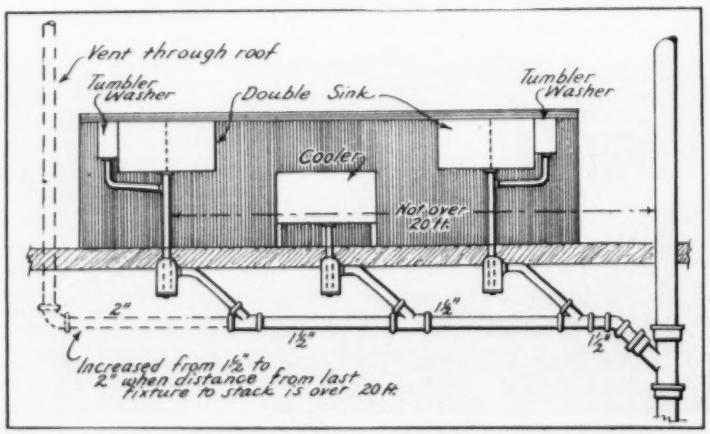


Fig. 2—Here is a diagram showing the general plan of the bar and waste connections required in Providence, Rhode Island

Eliminate Strange Flavors!

Created by the use of Improper Equipment

SEVERAL STATES AND MUNICIPALITIES HAVE ALREADY PASSED REGULATIONS PROHIBITING THE USE OF RUBBER BEER HOSE.

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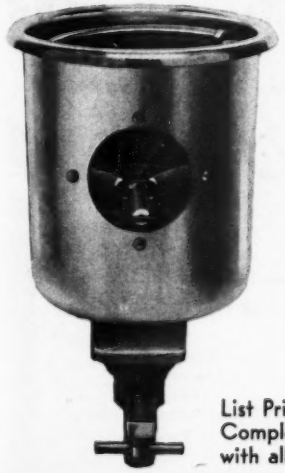
AMERICAN VISUAL GLASS WASHER

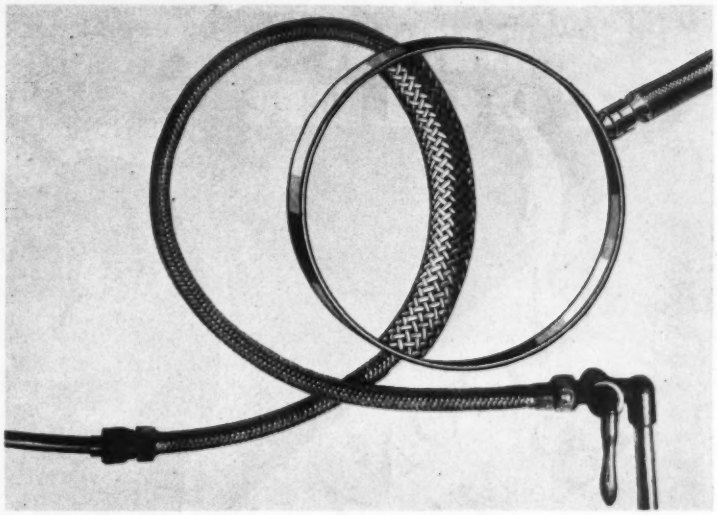
RINSES EACH GLASS INDIVIDUALLY BEFORE THE CUSTOMER'S EYES.

Breweries Advise That Glasses Be Rinsed in Fresh Cold Water Immediately Before Serving.



Fits Any Size Glass or Stein. No Plumbing Necessary. Instantly Installed.

List Price. $19.50 Complete with all connections.



ALL METAL FLEXIBLE BEER HOSE

"FLEX-PIPE"

FLEX-PIPE is a permanent and sanitary all metal Flexible Beer Hose which permits the safe and easy handling of the Beer—and eliminates continual replacement costs!

EVERLASTING
No Kinking – No Deterioration – No Swelling – No Leaking
and good tasting beer

FULLY GUARANTEED

RECOGNIZED AND PROVED
FOR SAFETY AND SANITATION

Each Standard length is completely assembled with attached standard C. F. or B & B Couplings for immediate and easy hook up to all tapping systems.

Standard Size Lengths three and four feet
List price $1.75 per foot
Other size lengths—prices upon application.

Manufacturers of The American All Steel Constructed Beer Coolers, Automatic Electric Beer Pumps, and a complete line of Beer Dispensing Equipment and Accessories. Our catalog No. 105 is your's for the asking.

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37 WEST 19th STREET NEW YORK CITY

A Genuine PEERLESS... Portable · BEER · COOLER

COMPLETE ONLY $19.50 F.O.B. DETROIT

NATIONALLY ADVERTISED to 18 Million People

... For the first time in history, here is a Genuine Peerless Cooler selling below $30.00... way below. • Genuine Peerless quality all the way through. • It's made for a volume market and a volume market is made for it by the launching of the biggest sales promotion plan ever put behind an item of this nature. • This year, beer will be more popular than ever and cool draught beer is always better and less expensive. • Turn that amber flow to gold. • We'll show you how. • Write for our new super-profit plan.

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AMERICAN TAP BUSH COMPANY • DETROIT, MICHIGAN
Manufacturers of Beer Handling Equipment for over 38 years and makers of the famous Peerless Taps and Bushes.

Products

for the

Beer and Bar Equipment Dealer

Readers will find in this section information and news regarding products for use in making their beer dispensing sales and installations

Eighth-Barrel and Dispenser

The Hackney steel beer barrel is now offered in four sizes—full, half, quarter and eighth.

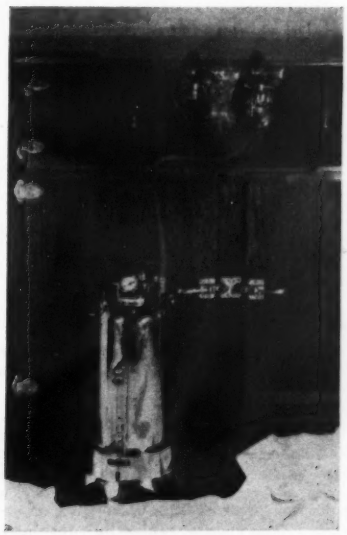
Maker states that the recently completed eighth barrel includes the features of design and construction that have placed the Hackney barrel in high esteem by both brewer and dispenser.

These advantages are said to include: Accurate capacity—there is virtually no variation—assuring the dispenser full measure at all times, fine appearance, cleanliness, and extreme ease of handling, due to light weight. It is believed that the use of the eighth barrel will result in a greatly increased market for draft beer, since it is a practical means of selling for home and club consumption.

In connection with the Pony-Boy dispensing unit—consisting of carbonic gas bottle, pressure gauge, faucet, tap and rod—beer can be dispensed in the home with no loss of quality. Made by: Pressed Steel Tank Co., Milwaukee, Wis.

Cleans Coils With Steam

A tested steam coil cleaning apparatus. Maker says test records show boiler will stand one thousand fifty lb. pressure; and that beer flowing through coils after cleaning was completely free from bacteria. Electrical heating element is wound around a cylinder three in. in diameter, seven in. long, with water circulating through cylinder. This keeps element from ever getting to red heat, giving longer life. Can be used only on 110 volt line. Maker feels that there is live and vast market for such a product. Made by Parker-Van Proyen Manufacturing Co., 35 E. Wacker Drive, Chicago.



Mechanical Dish Washer

There must be variety in dish washers, as in all things. Illustrated here is a model which, the manufacturer says, takes up less than four square feet of floor space and can be installed within any built-in sink, cabinet, or bar equipment, or placed in any convenient location. It will, maker further says, wash glasses, beer mugs and dishes in a very short period of time, due to the water

GUARANTEED
UNIFLOW
"THE PUMP SUPREME"

Kleen-Air BEER PUMPS

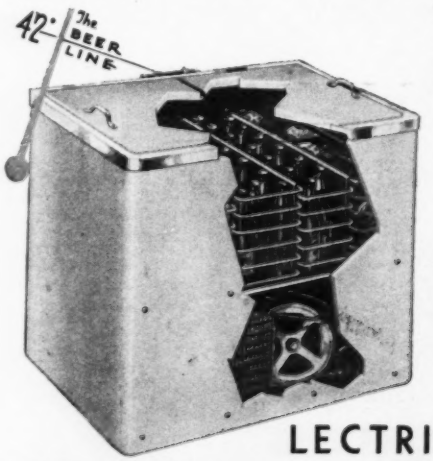
$46.33 NET

Systems for from 4 to 24 taps

For long, constant and uninterrupted service UNIFLOW KLEEN air pressure systems meet the needs of modern beer dispensaries. *All air passages are free of oil and deliver clean, odorless air* thus preventing spoilage of beverage while being drawn. A money saver compared to CO_2 gas. Preferred by many experienced vendors of beer and ale because of the superior glass which it enables them to sell. New low net price to dealers on 4 to 10 taps system $46.33. UNIFLOW Beer Pumps offer 10 advantages—write for them.

TO JOBBERS

Ask for prices and complete data on UNIFLOW beer dispensing equipment.



$90.00 NET

LECTRIK-ICE
BEVERAGE COOLERS

UNIFLOW fully automatic, electric refrigerated beverage bottle coolers are beautiful, efficient and economical. Enable vendors to sell bottled beverages at proper temperature and help increase sales. Saves 50% on ice bill. Net price to dealers for cabinet, complete, four case capacity $90.00. Bottles cooled by either water bath or air. In six sizes from four case to twenty-six case capacity. Ask for folder with complete description.

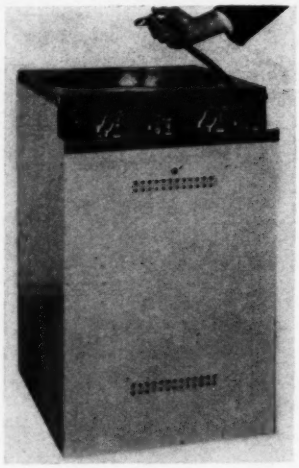
THE UNIFLOW MANUFACTURING CO.
ERIE, PENNA.

manufacturers of

DOMESTIC AND COMMERCIAL ELECTRIC REFRIGERATORS
MILK COOLING EQUIPMENT
WATER SYSTEMS WATER SOFTENERS
and CELLAR DRAINERS

Send for catalog on any items that interest you.

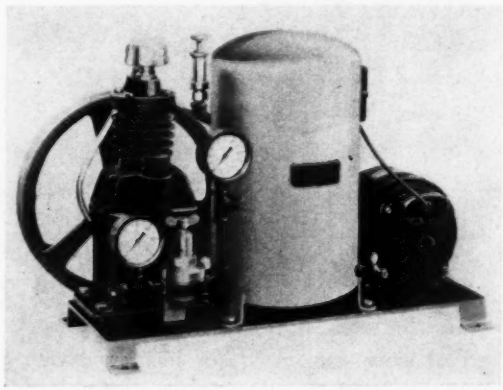
action. A seething volume of hot water surges up from bottom of tub and drops down over and around the glasses, etc., being washed. Machine is furnished with



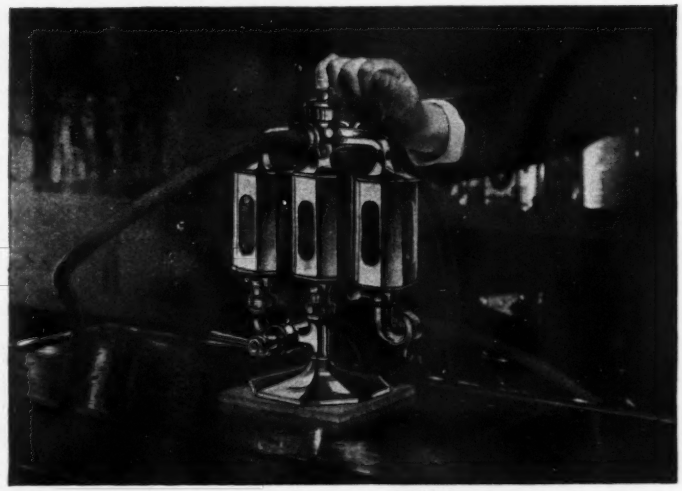
spray rinsing attachment. Specially-built trays for glasses and mugs are available. Product of Modern Maid Company, 3117 First Ave., S.E., Cedar Rapids, Iowa.

New Beer Pump Is Announced

A new beer pump just recently announced is shown here. It is described as having a muffler and air cleaner located on the intake manifold. An automatic starting and stopping switch starts the motor at 30 lb. per sq.



in. and stops it at 50 lb. per sq. in. This switch is equipped with heater coils for 110 or 220 volt connections. The idea is to give ample protection to the motor so that it will not burn out in case of reduced voltage. It is mounted with a steel pressure tank and motor on a base designed to reduce the weight. Fittings include a drain valve and a safety valve, two pressure gauges and a pressure regulator. The pressure regulator is equipped with a shut-off valve. As soon as the



$250.00 a month is YOURS
And more, too, depending upon you

You can add an income to your business that will be as REGULAR AS RENT DAY. Cleaning beer coils is right in the plumber's alley. It's a line of work that quickly pays for itself, leads to more plumbing business, reduces your overhead, makes friends, and gives you a steady, dependable income.

Many plumbers have found the new field of beer equipment installation and servicing a REAL LIFE SAVER. SO CAN YOU. It keeps you in weekly touch with your customers. This is a line of business that doesn't mean a big investment on your part, nor does it take a highly skilled mechanic to do the job. NOW IS THE TIME TO START IN THIS BUSINESS. Send for details now.

The UNIVERSAL BEER COIL CLEANER is easy to operate, quick to do the job and does it better than any other way. It is well made and won't get out of order. You don't have to bother with acids. No chemicals. No steam. No worry about cracked coils. Cleans electric refrigerated coils without fear of damage. The UNIVERSAL BEER COIL CLEANER scours, polishes, and is purely mechanical. It is the one way that REALLY CLEANS, without damage or leaving a taste to the beer.

Our machine is light, easy to carry, compact and quick to set up.

THE UNIVERSAL COIL CLEANING METHOD TRADE MARK

The Brewmaster's Friend

IT COSTS YOU NOTHING TO FIND OUT. Fill out this coupon NOW. Send it today.

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Gentlemen: Please send me full information about the UNIVERSAL BEER COIL CLEANER.
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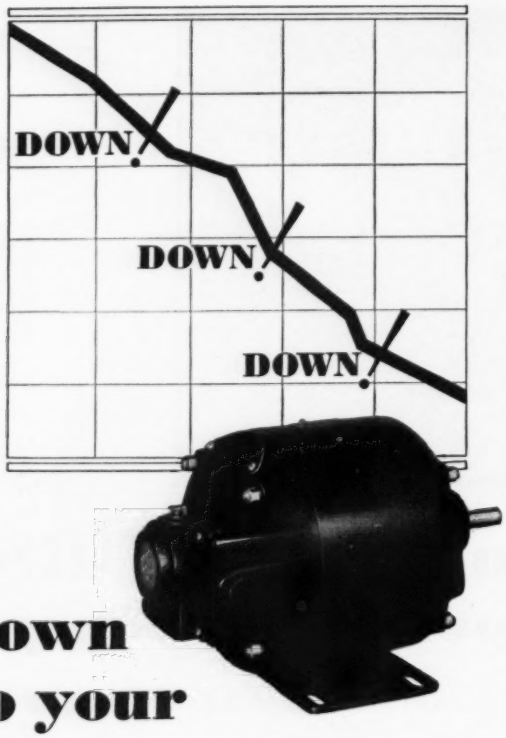

Down go your service costs when G-E MOTORS drive your automatic beer pumps

Type RSA, high starting torque
Type KH, low starting torque

And here are four important reasons why they'll lower your service costs and simplify installation:

1. Drip-proof end flanges keep dripping liquids out of motor — lower maintenance
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For further information on these "care-free" motors and other G-E products, such as control, wire and cable, etc., write to General Electric Company, Dept. 6A-201, Schenectady, New York.

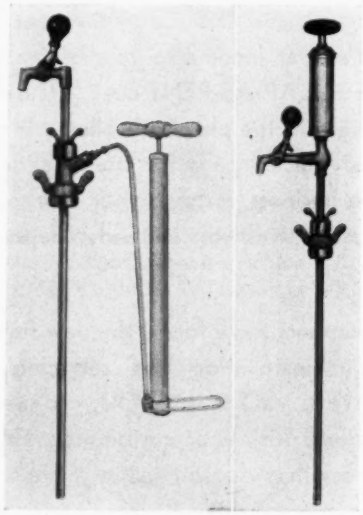
070-7

GENERAL ELECTRIC

pressure is released from the diaphragm the valve is made to close automatically and to keep the air in the tank. The fan fly wheel is made to keep the pump cool. The crank shaft is described as being drop forged; ground and finished. As for the bearings they are described as being die cast. The unit is finished in a high gloss enamel in orange and black. It is made to be operated from any ordinary electric light socket. The bore and stroke is 2⅛-in. by 1¼-in.; the tank is 8-in. by 15-in.; the capacity is 15 gallons; maximum pressure is 60 pounds; motor h.p. ¼; length, 25-in.; width, 11½-in.; height, 17-in.; shipping weight 95 lb.; displacement, 1 cubic foot; RPM., 395. The Manley Manufacturing Company, located at York, Pa. is the maker.

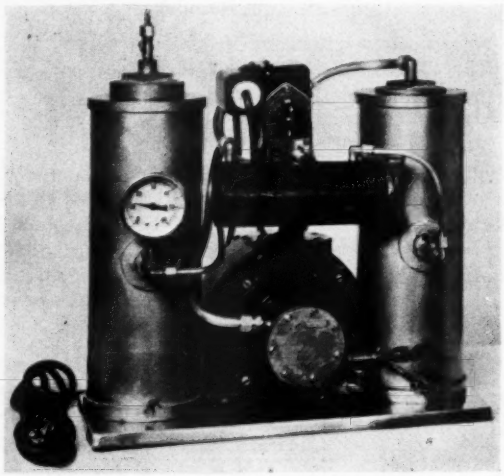
Two Picnic Pumps

The picnic pump which is shown in the accompanying illustration at the left is constructed with a ⅝-in. tap rod that has in combination a ground key faucet. The unit comes complete with a tap of the peerless type that has a large wing nut feature. It has a threaded connection so that any automobile pump can be used with it. Through the use of the tap and tap rod, the idea is that it is possible for the air to enter the top of the barrel thus placing the pressure on the beer and forcing the beer up through the tap rod. The ⅝-in. tap rod has been employed for the purpose of permitting a fast and efficient drawing of beer.



The unit shown at the right has a pump in connection with it. This has a 6-in. barrel 2-in. in diameter. On the plunger of the pump, there is a check valve which allows air to enter the chamber of the pump when the handle is pulled up. When the handle is pushed down, this check valve automatically closes for the purpose of making it possible to force the entire chamber full of air into the barrel. The tap rod is made up for regular ½-barrel sizes 28½-in. long. A ⅝-in. outside diameter heavy walled tube tinned inside and out is used. The inner tube through which the air passes,

is made of 7/16-in. material. The faucet on the pump is of the ground key type and is designed with the same core openings and action as the ground key faucet used on bars. Grand Haven Brass Foundry, located at Grand Haven, Mich. is the manufacturer.



An Electric Air Pump

The air pump which is illustrated here is rated as having a capacity in excess of 30 glasses per minute. It is equipped with a 1/6 h.p motor. Its length is 16-in., its width 10-in. and its height 16-in. The weight of the unit is 50 lb.

A second model not illustrated here but made by the same manufacturer is equipped with a ¼ h.p. electric motor and is rated as having a capacity in excess of 45 glasses per minute. It is equipped with a storage tank and three reducing valves so that three different pressures can be maintained simultaneously. Pacific Specialty Mfg. Co., 557 Market Street, San Francisco, California is the maker.

Market for Dealers

Dealers and manufacturers of beverage dispensing and food service equipment are finding a market among hotels, clubs and restaurants where repeal has forced quick modernizing. Present day business reveals this as a development which can be counted upon for a large and steady volume of orders.

Patrons of such eating and drinking places demand the latest and best. The question of obsolescence or of replacing equipment because it has worn out or has become uneconomical because of later improvements, is not of first importance in this new market. The modernizing is compelled by the rapid shifts in public taste which bring patrons flocking to those places where style and modern equipment cater to the fancies and desires of the pleasure seeking public.

A natural result of this development is seen in the orders placed and still being given for making over well known rooms in popular hotels and restaurants. A

CURTIS
Beer Equipment

Outstanding
QUALITY
Makes It Easy to Sell

CURTIS Beer Pumps

Compact (vertical or horizontal tanks). Precision made. Reflect our 40 years experience in building air compressors. Air strainer on intake, quiet, rubber mounted, V-belt drive, wick-oiling. Uses Po-Ri-Co for lubrication, won't contaminate beer, cost of pumping much lower than with gas. Adaptable to stationary or portable bars—1/6 or ¼ H. P. sizes. Attractively priced. Details on request.

Refrigerating Units

Design and precision tooling combine to make these units extraordinary from the standpoint of efficiency; and amply able to withstand the exacting requirements of long continued intermittent service. Buyers who seek good equipment will be interested in these units. Details on request.

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PNEUMATIC MACHINERY CO.
1934 Kienlen Avenue, Saint Louis
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Beer Dispenser

This handy, portable dispenser "Makes Good Beer Better." Ideal for home, club or hotel use. Box is heavily insulated and is equipped with block tin coil. Tray on inside for glasses . . . Chromium faucets. A nicely finished, highly attractive and very useful dispenser. Reasonable in price. Write today for FREE Booklet.

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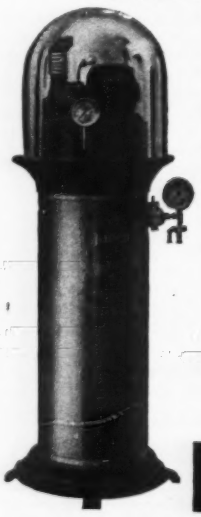
MAKE REAL MONEY
Selling the
JANETTE BEER PUMP
The Standard for 25 Years

WE WILL ASSIST YOU
with a
TIME PAYMENT PLAN



Which enables you to sell on a small down payment with convenient monthly terms on the balance and

YOU GET YOUR MONEY NOW

If you have a reputable firm with a good financial standing, and cover the tavern trade, there may be an excellent chance for you to act as our distributor with an

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Chicago, Illinois

Ask any Old Timer about JANETTE Beer Pumps

FOR Profitable INSTALLATIONS

Fig. B131, Ground Key Bar Faucet (Ball Handle Type). Finish Polished Brass or Chrome Plated.

Specify
RUNDLE-SPENCE

•FIG. B134 — Compression Ice Water Faucet with Water Sterofier. Water produced by the Sterofier is the equal if not superior to bottled spring water, and the cost of same only a fraction of the cost of bottled spring water. Renewable cartridge may be replaced at small nominal cost as required. Finish Chrome Plated.

Investigate the Rundle-Spence line. Write for Catalog today.

RUNDLE-SPENCE MFG. CO.
445 NORTH 4TH STREET
MILWAUKEE, WISCONSIN

62 Years of Brass Manufacturing Experience

management seeing trade dropping away, finds the reason in the re-equipped services of a competitor and finds the answer in originality in refurnishing its own rooms.

An example of this developing market is furnished by the new Tic Toc Club—the "$100,000 Castle in the Air"—on the top of the Park Central Hotel, 56th Street and 7th Avenue, New York City. Refurnished with new equipment, this room is winning back trade.

Taverns—

(Continued from Page 144)

Right here, however, comes an important consideration—even though such excellent regulations are enforced as far as the original installation is concerned, how can it be known that the equipment is being constantly put to proper use and health regulations carried out? The answer is that every drink establishment is periodically inspected by Health Department inspectors.

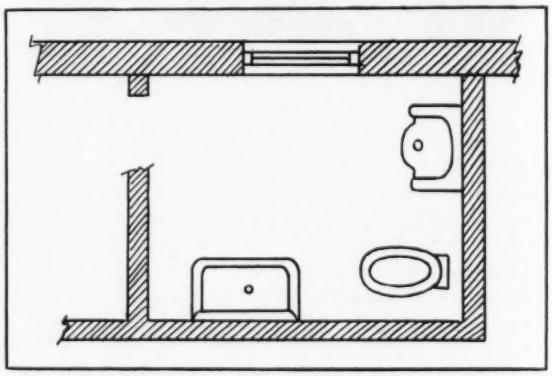


Fig. 3—This layout of a toilet room with a lavatory included in the room is prohibited in the Providence regulations

Fig. 2 shows the general idea of the bar waste connections as required in Providence.

Traps are required to be drum traps and they are generally set below the floor, with the trap screw down.

It will be noted that whereas in a large majority of cases, plumbing codes call for indirect waste connections for beer bars and soda fountains, Providence calls for direct waste connections.

Personally we favor the indirect connection, on the ground that there is greater safety in such a connection from contamination of food and drink.

Freedom from siphonage of traps seems to be a necessity under the Providence regulation. This allows bar traps to be installed without venting, provided the farthest branch waste is not over 20 ft. from the stack. When this distance is greater than 20 ft., the size of pipe must be increased to 2 in. and the main line carried through the roof, as shown by the broken lines in Fig. 2.

Our understanding is that the reason venting of bar traps was not called for is the fact that in a great many buildings, to have vented the traps would have been practically impossible and would have required the carrying of stacks three, four and five and more stories.

Notwithstanding, our personal preference is decidedly

in favor of venting. As a matter of fact, it would seem to us that the impracticability of venting bar fixtures installed in old buildings, would stand as a strong argument for indirect waste connections which would, of course, require no venting.

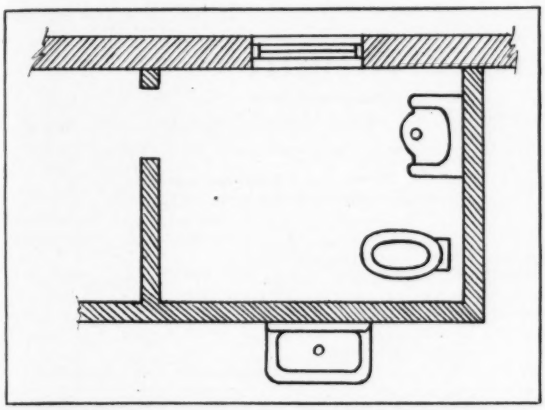


Fig. 4—This is the general toilet room layout which is approved. Note that the lavatory is outside

In Fig. 5 is shown a side view of the bar, showing the waste from the tray or sink where the beer is drawn, and connecting with it the drip from the counter where the beer glasses are set. Formerly beer drippings often were allowed to drip down over the coils, creating exceedingly foul conditions.

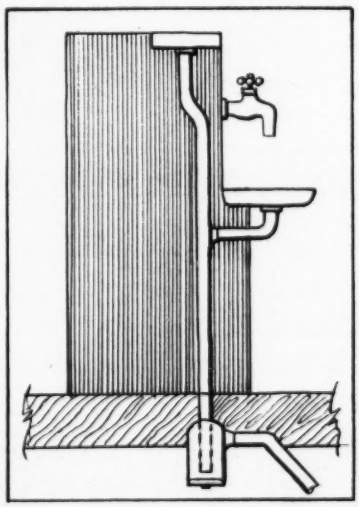


Fig. 5—Side view of a bar showing the waste from the sink or tray where the beer is drawn

One of the by-products of the situation created in Providence by the coming back of beer was the discovery that in many instances where bars had been torn down at the time prohibition came in the work had been done so carelessly and so poorly that many open connections

Write for Circular of the "GRAND" Line Of Picnic Pumps and Taps

No. 2541 — Complete as shown.
No. 2542 — Pump with New York Tap.
No. 2540 — Pump less Tap.
Just what you have been wanting. A sturdy picnic pump complete with Bock Tap and easy operating Pull Handle Ground Key Faucet.

No. 2520 — Complete as shown.
A complete picnic tapping unit where the air enters the barrel through the tap and allows a full flow of beer through the tap rod.
No. 2521—Ditto less Tap.
No. 2522—Ditto with New York Tap.

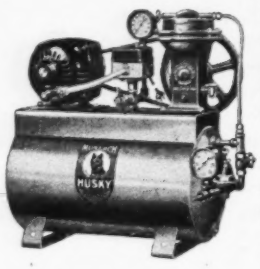
No. 2432—New Style Grand Tap.
For use with wood and steel barrels, featuring a large wing nut for tightening so the tap can be securely fastened to the barrel by hand without the use of tools.

No. 2500 — Complete as shown but less pump.
No. 2502—Tap Rod only ½ barrel.
A perfect unit for anyone who has an automobile pump handy—easy working Pull Handle Faucet with a sturdy heavily tinned Tap Rod with a heavy boss for driving rod into the barrel. (Pumps not furnished.)

No. 2433 — New Style Grand Bock Tap.
For use with picnic pumps, featuring a large wing nut for tightening so the tap can be securely fastened to the barrel by hand without the use of tools.

Grand Haven Brass Foundry
GRAND HAVEN, MICHIGAN

PUMPS PURE AIR ONLY



No oil fumes to reach the beer. Bronze bearings throughout. Force feed lubrication. Quiet in operation. Completely assembled ready to install. Guaranteed for two years. A ready seller.

Write for exclusive distributor proposition.

The Monarch Engineering Co., Dayton, Ohio

Beer Dispensing Equipment

Bar Faucets, Tapping Rods, Beer Dispensing Equipment and Fittings; Coils, Air and Gas Regulators and pumps.

for

26 Years!

ILLINOIS BRASS MFG. CO.
224 NORTH ADA STREET CHICAGO, ILL.

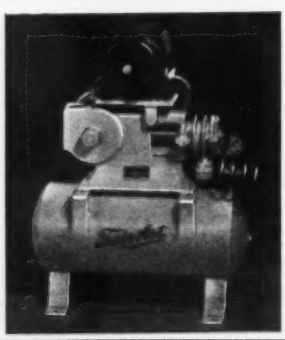
Positively Pumps No Oil!

Dayton's "WHITE CAP" Automatic, Oil-less BEER PUMP

EXCLUSIVELY FOR BEER!

Ideal for dispensing draught beer in large volume—because it assures a good supply of clean, dry compressed air at all times. No pistons or rings—prevents pumping of any oil whatsoever into air line. ¼ HP repulsion-induction motor—10 gal. tank—cuts out at 30 lbs. pressure and in at 20 lbs.—quiet operation—V-belt driven. Size 24"x25"x 12". Weight—80 lbs. net. Ask about Model Y-100—Also Air Compressors from 1 to 50 cfm.

The DAYTON AIR COMPRESSOR CO.
"49 Years of Specializing"
425 Valley St., Dayton, Ohio



.No Oil
.No Oil Fumes
.Just Fresh Beer

The FAIR-ART is constructed so that oil or oil fumes can not get even remotely close to the beer. Air compressor cylinder and crank case housing are separated, eliminating need for lubrication.

•

Profitable territories are still available. Write at once.

The **FAIR-ART**

Shipped completely assembled. Two sizes: No. 800—10 tap capacity. No. F-800—30 tap capacity.

FAIRBANKS ENGINEERING CO.
WORCESTER, MASSACHUSETTS

had been left into the drainage system, creating direct communication with the sewers, and that this condition had continued all through the intervening years without correction.

It is interesting to note that this discovery led directly to a house-to-house inspection in many sections of the city of Providence.

Government—

(Continued from Page 35)

Of the 1,647 homes surveyed complete replacement of 100 of the houses was desired by the occupants.

Needs for Additional Space

Space requirements were as follows:

	Have now	Additional rooms needed
Storage space for fresh fruits and vegetables	900	296
Bath rooms	510	287
Basements	684	165
Bed rooms	4800 rooms	141 rooms
Wash room for farm help	115	81
Halls	874	79
Work rooms	258	77

Water Supply and Sewage Disposal

	Have now	New installation needed	Per cent of houses needing new installation
Water carried by hand	1067	...	...
Hand pump in dwelling	87	8	.5
Running water, cold	538	25	1.5
Running water, hot	412	15	.9
Unimproved toilets	914	...	...
Improved toilets, outdoor	209	12	.7
Improved toilets, indoor	457	60	3.6
Tub or shower baths	566	228	13.8
Kitchen sink with drain	577	187	11.4
Septic tank	172	9	.5
Cess pool	276	58	3.5

Light and Heat

	Have now	New installation needed
Kerosene or gasoline lamps	1031	..
Gas light	72	2
Electric light	562	11
Fireplaces	872	2
Stoves	846	1
Central heating plant	499	8

Refrigeration, Laundry and Cooking Facilities

	Have now	New installation needed	Per cent of houses needing new installation
Ice boxes	1166	58	3.5
Mechanical refrigerators	180	4	.2
Washing machines, power	177	3	.2
Washing machines, hand	661	1	.1
Cooking facilities:			
Wood or coal stoves	1399	1	.1
Gas stoves	131	2	.1
Electric stoves	.36	...	...

Yard

In answer to the question: If you had $500 to spend improving your home, the following items were mentioned, among others:

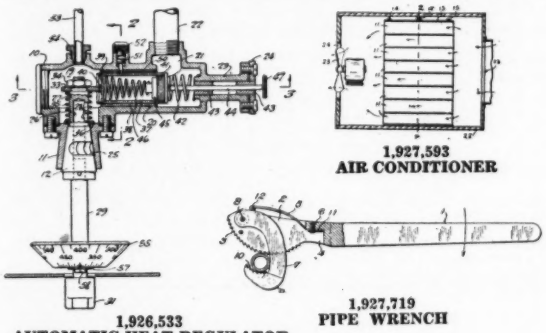
	Number of farms	Per cent of total farms
Bathroom equipment	120	7.3
Electricity	95	5.8
Additional rooms	93	5.6
Water system	89	5.4
Interior walls, ceilings, floors	82	5.
Roofs	81	4.9
Exterior walls	71	4.3
Foundations	64	3.9
Doors, windows, screens	58	3.5
Porches	47	2.9

These are all preliminary data and subject to revision.

New Ideas From Patent Office

Heating Department

1,926,533. Automatic Heat Regulator. John H. Grayson and Frederick A. Straub, Lynwood, Calif., assignors to Grayson Appliance Company, Limited, Lynwood, Calif., a corporation of California.



1,926,533
AUTOMATIC HEAT REGULATOR

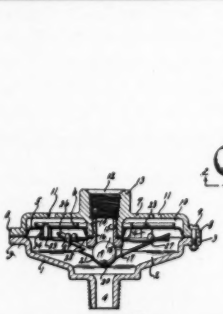
1,927,593
AIR CONDITIONER

1,927,719
PIPE WRENCH

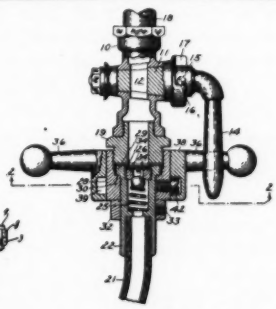
1,927,593. Air Conditioner. Paul Mohler, Seattle, Wash.

1,927,719. Pipe Wrench. Joseph Stizns, Seattle, Wash.

1,927,669. Gas Pressure Regulator. Clarence H. Morrow, Cleveland, Ohio, assignor to The Hotstream Heater Company, Cleveland, Ohio, a corporation of Ohio.



1,927,669
GAS PRESSURE REGULATOR



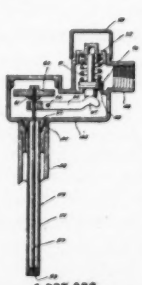
1,927,448
VALVED COUPLING

1,927,448. Valved Coupling. Charles M. Terry, Decatur, Ill., assignor to A. W. Cash Company, Decatur, Ill., corporation of Delaware.

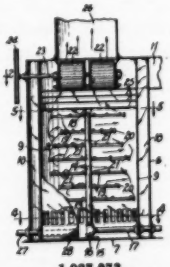
1,027,738. Pipe Wrench. Carrol Fisher, Brooklyn, N. Y.

1,927,036. Safety Relief Valve for Hot Water Heating

1,927,738
PIPE WRENCH



1,927,036
SAFETY RELIEF VALVE FOR HOT WATER HEATING SYSTEMS



1,927,073
AIR WASHER

ACHESON FITTINGS

1. Non-leak Air Tested Under Water
2. Red Brass Long Life and Resistance to Corrosion.
3. Quality. Accurately Threaded. True Dimensions.

The first cost is the last cost—with Acheson Red Brass Fittings. Complete customer satisfaction. No service follow-up losses for the plumber. Ask your jobber. Write for catalog.

ACHESON MFG. COMPANY
Factory and Office: Rankin, Pa.
Warehouse—197 *Lafayette St., New York, N. Y.*

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• WARNOCK •
Triple Wear Wrenches

The Warnock wrench is easyto adjust. The strap is arranged in such a way that it can be drawn absolutely tight in *one* movement. Notice, too, that this strap is triple folded at the point of greatest strain.

For chrome, brass and nickel plated pipe

WARNOCK MFG. CO., Worcester, Mass.

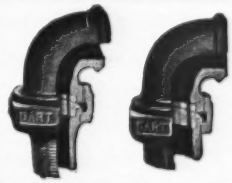
CURTIN ROTARY BALLCOCK

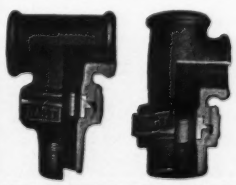
On your next job try a Curtin Ballcock. Furnished for bottom, back, and top supply tanks. These ballcocks are adjustable to high or low pressure, and are noiseless and positive in action.

A. F. CURTIN VALVE CO.
Medford, Mass.

It's Quiet—Try It. *"We Compete in Quality Only"*

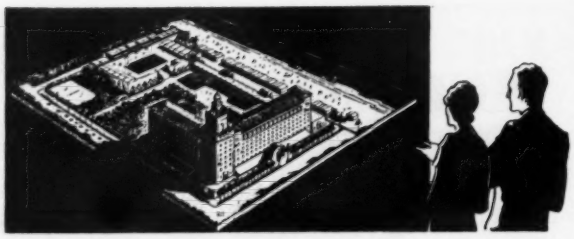
For Every Pipe Line Application . . . Specify DART UNIONS





DART Unions are equal to the most strenuous service conditions. The two bronze seats are positive assurance against leaks and corrosion. Heavy pattern malleable iron pipe ends and nut are for strength. Specify Dart.

E. M. DART MFG. CO., Providence, R. I.
Sales Agents: The Fairbanks Co., New York.
Canad. Fact.: Dart Union Co., Ltd., Toronto



Enjoy the One and Only MIAMI BEACH at Special Springtime Prices

Spring—and the urge to kick up your heels! Laugh at weather vanes, thermometers and work . . . get away from it all—play in Miami Beach sunshine, that makes your vitality nip up to healthful normalcy.

March and April in Florida? Lovely!

Prices? They're more reasonable! In addition to low round trip fares of all transportation lines, the Roney Plaza offers special late-season rates, (*effective March 15th*), with all mid-season privileges in the Florida Year Round Clubs — Roney Plaza Cabaña Sun Club, Miami Biltmore Country Club, Key Largo Anglers Club . . . transportation, without extra charge, by aerocar, autogiro and sea-sled to all resort activities.

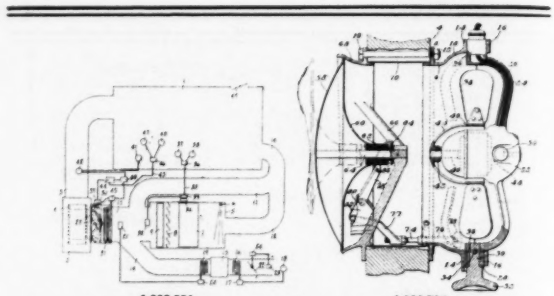
Open to May 1st. For literature, information and reservations write or wire direct to the hotel or see your travel agent.

RONEY PLAZA

AMERICA'S FINEST OCEAN FRONT HOTEL

Systems. Roy W. Johnson, Elkhart, Indiana, assignor, by mesne assignments, to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., a corporation of Delaware.

1,927,073. Air Washer. Ferdinand C. Ruehl, St. Louis, Mo.



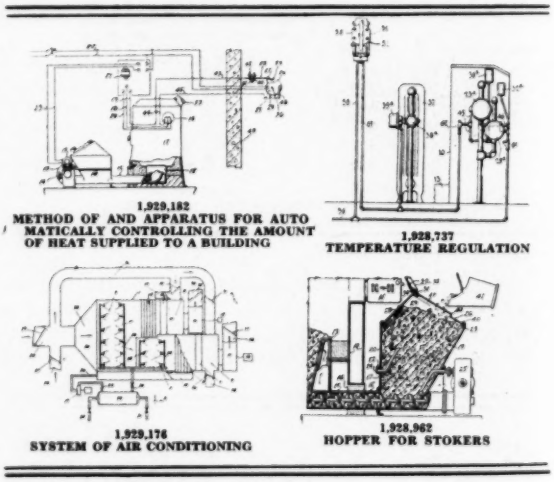
1,928,331
CONDITIONING AND VENTILATING SYSTEM

1,930,794
VENTILATING FAN

1,928,331. Conditioning and Ventilating System. Sewell H. Downs, Kalamazoo, Mich., assignor to Clarage Fan Company, Kalamazoo, Mich.

1,930,794. Ventilating Fan. Ernest B. Freeman, Newton, Mass., assignor to B. F. Sturtevant Company, Hyde Park, Mass., a corporation of Massachusetts.

1,929,182. Method of and Apparatus for Automatically Controlling the Amount of Heat Supplied to a Building. Ernest C. Webb, Portland, Oreg., assignor to Iron Fireman Mfg. Co., Portland, Oreg.



1,929,182
METHOD OF AND APPARATUS FOR AUTOMATICALLY CONTROLLING THE AMOUNT OF HEAT SUPPLIED TO A BUILDING

1,928,737
TEMPERATURE REGULATION

1,929,176
SYSTEM OF AIR CONDITIONING

1,928,962
HOPPER FOR STOKERS

1,928,737. Temperature Regulation. Arthur J. Otto, Milwaukee, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin.

1,929,176. System of Air Conditioning. Frank T. Leilich, Baltimore, Md., assignor, by mesne assignments, to William W. Varney, Baltimore, Md.

1,928,962. Hopper for Stokers. Haskell C. Carter, Portland, Oregon, assignor to Iron Fireman Manufacturing Co., Portland, Oreg.

Iowa—

(Continued from Page 54)

Fond du Lac, president of the Wisconsin association, Jacob Schuh of Milwaukee, C. H. Carlson of Sioux Falls, president of the South Dakota Association, and W. E. Abraham, acting secretary, were prominent visitors.

Mr. Calnan made an interesting talk in which he covered the work of the national office, code conditions, the work of health authorities, especially in Chicago, in uncovering the relationship between plumbing and health, the need for strengthening associations and for securing more effective sanitary codes and their better enforcement.

The discussion of the code situation by Mr. Flentje was interesting because of his close association with that work almost from the beginning. He told of the NRA organization at Washington and of the problems met in securing a code; of the relations with the other branches and the necessary accommodation of views which had to be made and finally he outlined the scope of the contractors' code and its purposes. He emphasized the importance of cost records under the code.

C. E. Redfield of the American Radiator Co., New York, gave a stirring address on merchandising, in which he outlined the present possibilities in promoting remodeling sales as well as giving suggestions in salesmanship.

R. V. Sawhill, editor of DOMESTIC ENGINEERING, Chicago, told of some of the developments which are taking place and which promise to have a definite influence on the future of the contractor-dealer's business. He emphasized the importance of the fact that after every one in the industry had seriously analyzed its distributing methods, they had returned to the familiar channel of manufacturer to wholesaler to contractor as the means of upbuilding the industry, a fact which the codes prove.

Zone reports were made by the respective officers, William V. Hagan, Sioux City, for the northwest zone; R. G. Jeffords, Fort Dodge, for the central zone; Frank H. Pierson, Fairfield, for the southeast zone and J. W. Lundon, Dubuque, for the northeast zone.

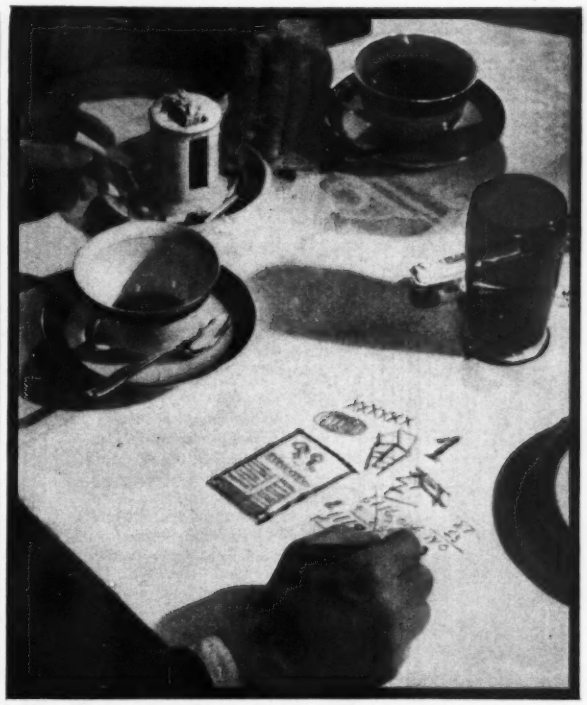
In electing officers, Mr. Lundon was unanimously re-elected secretary. Mr. Pierson became treasurer. The directors include two representatives from each zone; Roy Kerker and Mr. Lundon for the northeast; Mr. Pierson and L. T. Brumm for the southeast; President Palmer and Mr. Jeffords for the central and H. M. Labbitt and Mr. Hagan for the northwest.

Remodeling—

(Continued from Page 51)

rials due to the duplication of skilled labor ordinarily necessary in order to install the various scattered fixtures that made up a complete bathroom. To the plumber, on the contrary, the panels mean a new item of profit. These units demand no departure from standard plumbing practice. But the plumber has more than his regular job to do. By eliminating the confusion of the several other trades heretofore necessary to complete the bathroom, responsibility for the building of the entire room is now the plumber's except, of course, for the last details of decorative treatment.

"While the primary purpose in the development of these unit panels is to evolve a higher standard of efficiency for plumbing installation, an effort was, at the same time, made to apply the results of a long and intensive research in plumbing problems to the betterment or solution of many difficulties in ordinary plumbing practice."



Our table-cloths

HAVE GIVEN BIRTH TO SOME BIG IDEAS

WE ARE PROUD of our table-cloths. Many of them go to our laundry bearing distinguished marks of service. Curlicues. Doodads. Thing-a-ma-bobs. But we are happy to have them help you give birth to that big idea.

Thanks to you, and you, and you, the Roosevelt is becoming one of the most popular New York gathering places for sales and advertising executives. Perhaps it is that dollar lunch served in the Grill. Perhaps it is that we have reduced our room prices to $4. Perhaps it is the quiet, efficient service.

Come on over and use our table-cloths, too,* and if an extra one is needed to help you plan that campaign — just ask the head waiter.

***Pencils though. Fountain pens and indelible crayons leave us cold.**

The ROOSEVELT
B. Gordon Hines, Manager
Madison Avenue at 45th Street New York City

A UNITED HOTEL

YESTERDAY AND TOMORROW
Under One Roof

The elegance of yesterday and the modernity of tomorrow are yours at the famous Auditorium Hotel — completely modernized at a cost of over $100,000.

All the distinctive characteristics of superlative living, the high standards of service, the inimitable food and the distinguished Michigan Avenue location are offered you today in a new dress at a daily rate from $1.50 single without bath — from $3 single with bath — double from $5.
Write for illustrated folder

ARTHUR J. NEWMAN . . . . . MANAGER
AUDITORIUM HOTEL
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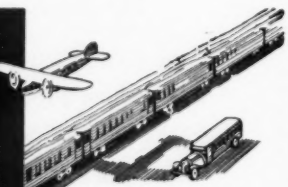
Make Your ST. LOUIS TRIP a real Pleasure



Your business trip will be more successful, too, when your own personal comfort is provided for. An easy chair, with a comfortable bed in a luxurious room in the heart of St. Louis is yours at low cost at the Melbourne.

400 ROOMS WITH BATH
from $2.50 single

Splendid food in Dining Room and Coffee Shop. Garage in Connection.
O. P. GREATHOUSE *Manager*

MELBOURNE HOTEL
LINDELL BOULEVARD AT GRAND AVENUE

The Old Metal Market

New York

(Dealers' Buying Prices, Cents a Pound)

No. 1 Heavy copper and wire	6.12½	to	6.25
Light copper	5.25	to	5.50
Heavy yellow brass	3.50	to	3.75
Clean light brass	3.00	to	3.25
New brass clippings	4.75	to	5.00
Zinc	2.25	to	2.50
Aluminum turnings, borings	5.50	to	6.00

Pittsburgh

Crucible copper	6.12½	to	6.25
Heavy copper and wire	5.50	to	5.75
Light copper	5.00	to	5.25
Red brass (No. 1 Comp.)	4.87½	to	5.12½
New brass clippings	4.50	to	4.75
Cocks and faucets	3.75	to	4.00

Cincinnati

Crucible copper	6.00	to	6.25
Heavy copper and wire	5.50	to	5.75
Light copper	5.00	to	5.25
Red brass	5.00	to	5.25
Heavy yellow brass	3.00	to	3.25
Light brass	2.50	to	3.00
New brass clippings	5.00	to	5.25
Scrap zinc	2.00	to	2.25
Block tin	40.00	to	41.00

Cleveland

Crucible copper	6.00	to	6.25
Heavy copper and wire	5.50	to	5.75
Light copper	5.00	to	5.25
No. 1 Composition red brass	5.00	to	5.25
Heavy yellow brass	3.50	to	3.75
Light brass	3.00	to	3.25
New brass clippings	5.00	to	5.25
Cocks and faucets	4.00	to	4.25
Zinc	2.25	to	2.50
Block tin pipe	42.00	to	45.00
Solder joints (close cut)	6.00	to	7.00

Chicago

No. 1 Heavy copper and wire	5.75	to	6.00
No. 2 Heavy copper and wire	5.00	to	5.50
Light copper	4.50	to	4.75
No. 1 Composition red brass	4.37½	to	4.87½
Heavy yellow brass	3.25	to	3.50
Light brass	2.50	to	2.75
New brass clippings	4.50	to	4.75
Cocks and faucets	3.50	to	3.75
Old zinc	2.25	to	2.50
Solder joints (close cut)	4.50	to	5.00
Block tin pipe	38.00	to	40.00

St. Louis

Crucible copper	6.00	to	6.25
Heavy copper and wire	5.75	to	6.00
Light copper	4.75	to	5.00
No. 1 Composition red brass	4.75	to	5.00
Light brass	3.00	to	3.25
New brass clippings	4.50	to	4.75
Zinc	2.75	to	3.00
Block tin pipe	45.00	to	46.00
Solder joints (close cut)	6.50	to	7.00

Detroit

Crucible copper	6.00	to	6.25
No. 1 Heavy copper and wire	5.75	to	6.00
Light copper	4.50	to	5.00
Red brass (No. 1 comp.)	4.50	to	5.00
Heavy yellow brass	3.25	to	3.50

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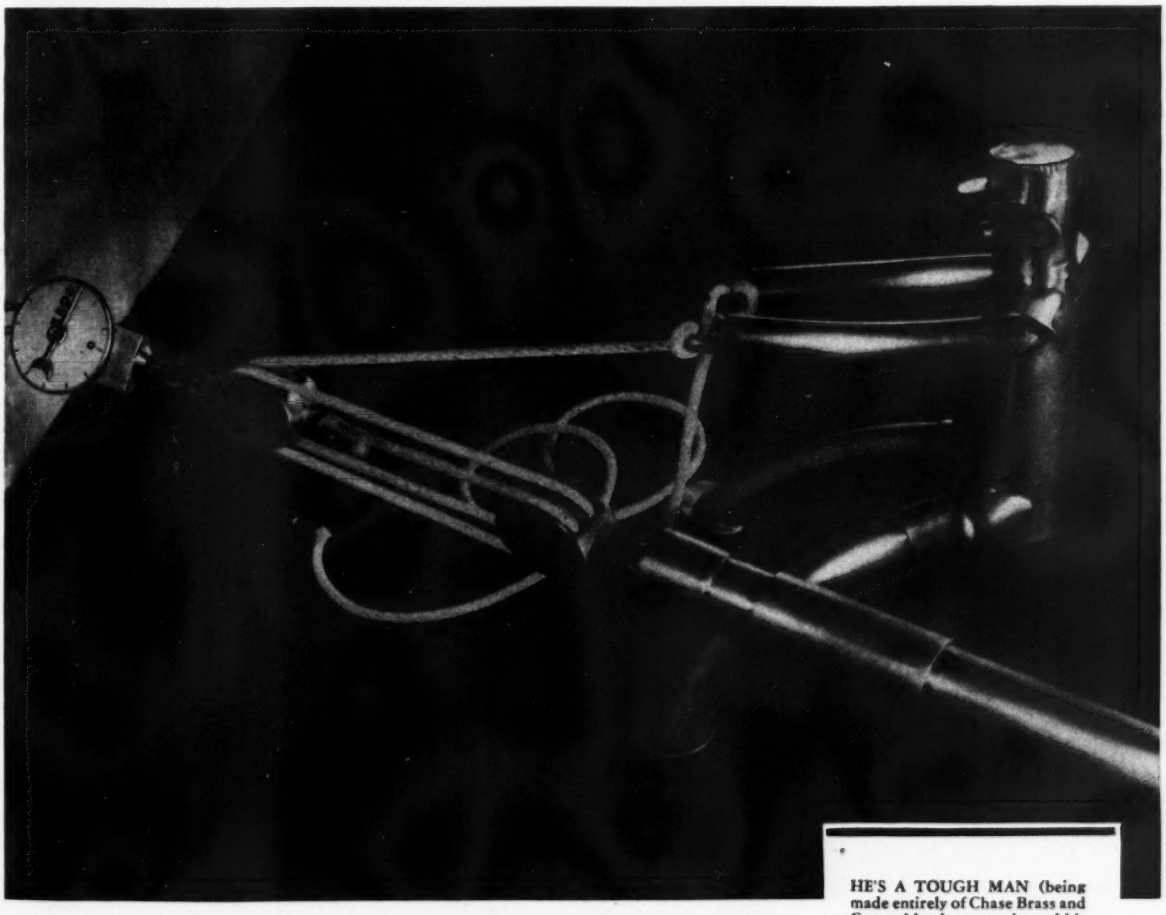

HE'S A TOUGH MAN (being made entirely of Chase Brass and Copper) but he overestimated his strength when he tried to pull a Chase Sweat Fitting loose. This figure is made entirely of Chase Tube and Sweat Fittings with a little Chase sheet brass for trimmings. He's sweated together just like a Chase rustless water system, and is well able to stand the hard knocks of a cruel world.

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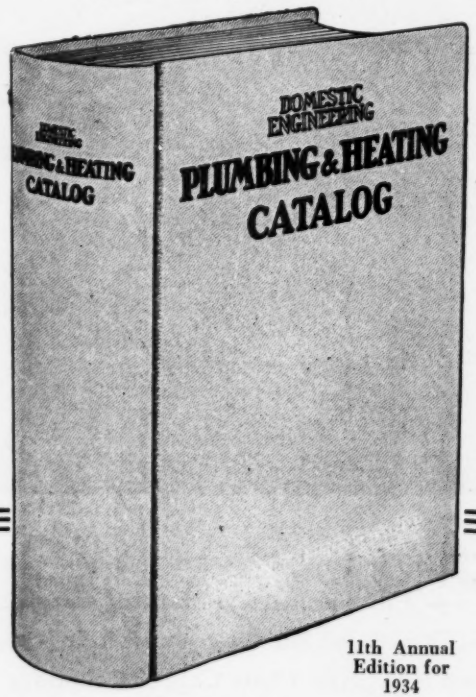

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11th Annual Edition for 1934

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